Medical Library
JUN 24 1941

The Health Magazine of the American Medical Association

HYGEIA

Do you have ATHLETE'S FOOT? See page 522

JULY · 1941 · 25c

Reprint from The Journal of the American Medical Association

AN OPEN LETTER TO DOCTORS ABOUT COSMETICS

By CARL WEEKS, President of the Armand Company, Des Moines, Iowa

It is our belief that the medical profession is vitally interested in the latest developments in cosmetics. Certainly every doctor has had numerous inquiries from his patients such as: What powder can I safely use? What cream will cleanse my face best? Yes, and many more questions such as these. Thus, the Armand Company, in keeping with its policy of truth and frankness in selling and advertising its products, wishes to go on record and make known to all the doctors just what our new face powder and face cream are made of, and why we feel you can unhesitatingly recommend them to your patients.

ON THE SUBJECT OF PURITY

The doctor rightfully wants to know first of all are the New Armand Face Powder and the New Armand Blended Face Cream as pure, as non-irritant and as near non-allergenic as it is possible to make cosmetics. In the course of perfecting these two products, we wanted to know the very same thing. So, we employed the services of a nationally known dermatologist who conducted comprehensive patch tests (Figure 1). 2,808 tests were made on women of various ages and complexions. Each ingredient in the New Armand Face Powder and the New Armand Blended Face Cream was kept in contact with the skin for seventy-two hours by means of adhesive patches. Not one skin irritation from the Armand ingredients appeared. It is our belief and the belief of the dermatologist who made these tests that the New Armand Face Powder and the New Armand Blended Face Cream are as near non-allergenic as it is possible to make them.

PHYSICAL CHARACTERISTICS OF THE NEW ARMAND FACE POWDER

The New Armand Face Powder is made from the following ingredients: Zinc Oxide, USP; Magnesium Carbonate; Talc; certified cosmetic colors; inorganic color, and perfume oils. To give you a definite idea as to how the New Armand Face Powder compares with the other leading face powders on the market, we employed two of the nation's leading research laboratories. Sixteen different nationally advertised face powders were thoroughly analyzed and compared. All the face powders were found to be free from heavy metals. They were all neutral. One contained starch. The chief difference was in the purity of talc and the uniformity of particle size. Two of these nationally advertised brands of face powder contained tremolite . . . one

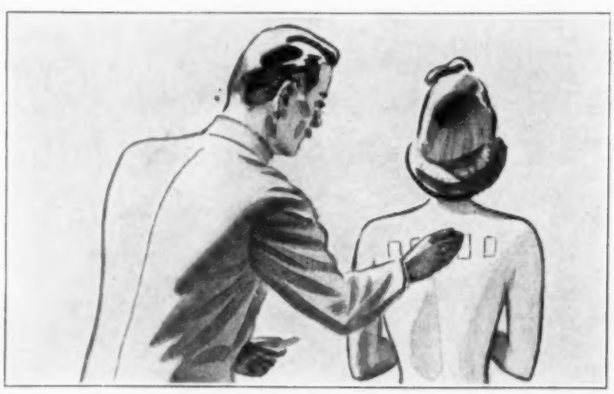


FIG. 1

brand as much as fifty per cent. Others varied greatly in particle size. Figure 2 is a microphotograph of an average face powder. Figure 3 shows a powder composed of fifty per cent tremolite. The analysis proved (figure 4) that the New Armand Face Powder has the finest and most uniform particle size of all the face powders tested. This is due to two very important factors.

First, the unique quality of the Armand talc. The Armand Company controls its own mine in California. The talc from this mine is free from lime, iron, and tremolite. We believe Armand has the finest deposit of talc discovered up to this time.

Second, the exclusive grinding process of the New Armand Face Powder which insures a much finer and more uniform particle size. This technique is the result of twenty-six years of manufacturing face powder.

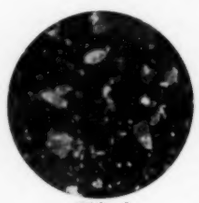


FIG. 2

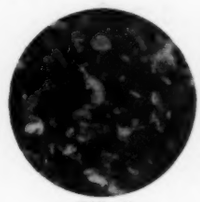


FIG. 3

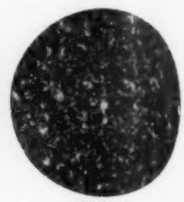


FIG. 4

PHYSICAL CHARACTERISTICS OF THE NEW ARMAND BLENDED FACE CREAM

The New Armand Blended Face Cream is a polyphase emulsion—a mixture of oil-in-water and water-in-oil types of emulsions. It differs chiefly from most other creams in that it mixes with both oil and water. The New Armand Blended Face Cream is made from the following ingredients: Diglycol Stearate, Cetyl Alcohol, Medicinal Mineral Oil, Diethylene Glycol, Sorbitol, Triethanolamine, distilled water, and perfume oils.

Laboratory tests made with twelve nationally advertised brands of face cream prove that practically all the cleansing creams are primarily grease creams. As there are two kinds of dirt on the face—that which mixes with oil and that which mixes with water, the Armand type of cream which mixes with both water and oil is desirable for more thorough cleansing, because it helps to remove both types of dirt from the face.

The New Armand Blended Face Cream contains no beeswax, heavy oils, or paraffin (all inert and incapable of absorption). It does contain organic substances such as: cetyl alcohol and diglycol stearate. The diglycol stearate is the detergent that helps the New Armand Blended Face Cream to cleanse the face more thoroughly.

The cetyl alcohol is considered one of the higher alcohols and as such is chemically related to the natural skin oil. It goes without saying that this type of ingredient is a very effective aid in softening the skin.

The New Armand Blended Face Cream has a p_H of from six to seven.

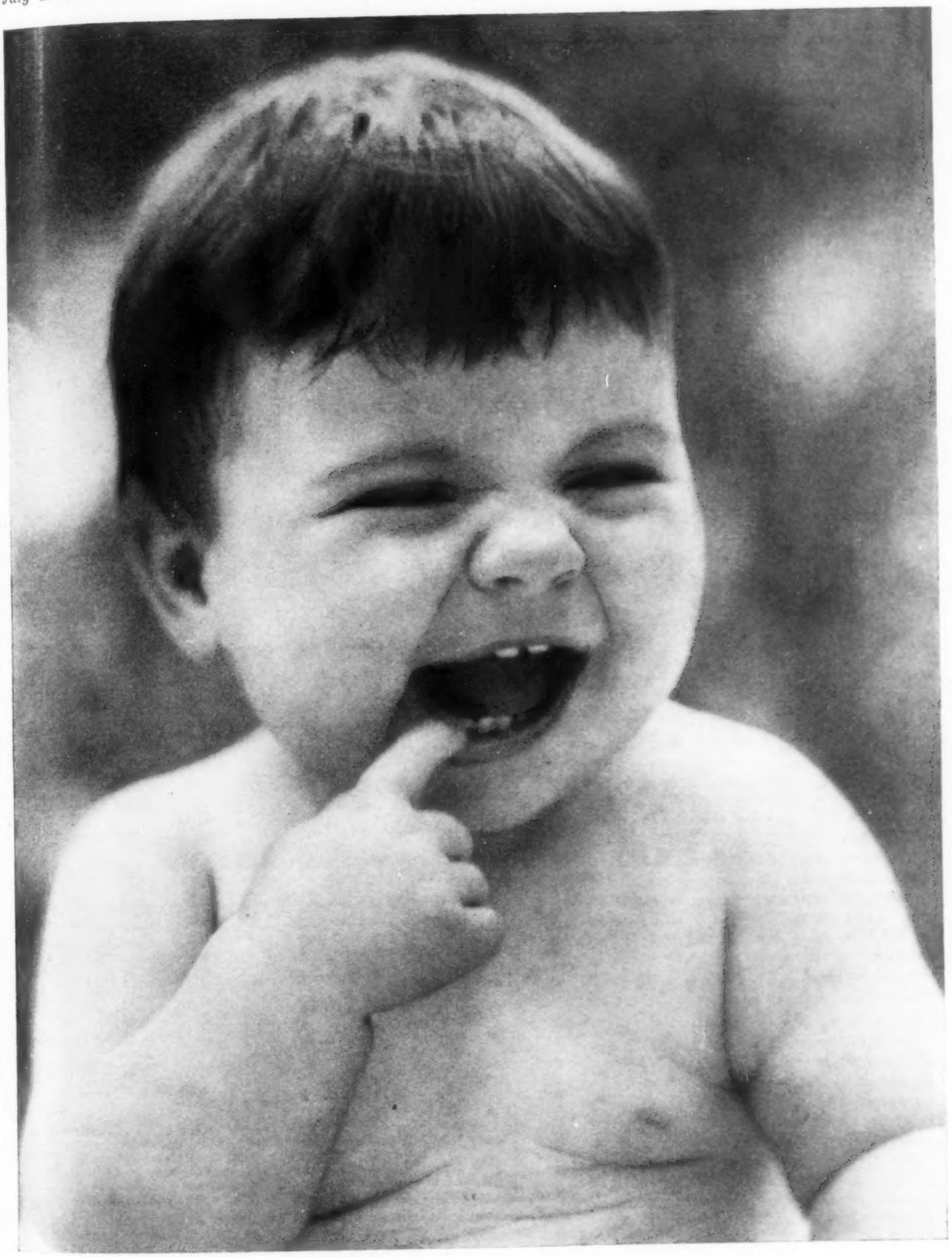
MEET BEAUTY AND PURITY REQUIREMENTS

The tests on the New Armand Face Powder and Blended Face Cream, plus twenty-six years of experience in manufacturing fine cosmetics—coupled with a constant effort to advance the standards of the entire cosmetic industry (Armand initiated the fight to remove orris root from all face powders—see Journal of American Medical Association July 4, 1925, Advertising page 37, Volume 85), we hope make Armand products readily acceptable to the medical profession. But of equal importance, Armand's new face powder and face cream give the women the kind of cosmetic beauty they want. The New Armand Face Powder with its finer and more uniform texture gives a smooth, satin finish to the skin. This is what every woman is looking for in her face powder.

The New Armand Blended Face Cream gives the woman a new, light, fluffy cream, which not only cleanses the skin, but effectively softens the skin as well. From the doctor's standpoint of purity, from the woman's standpoint of beauty, the new Armand Face Powder and Blended Face Cream are as fine cosmetic products as are available today regardless of price or package. Armand products are sold at popular prices in better drug and department stores.

SPECIAL OFFER

Send for Armand's Magic Shade Kit for testing face powder shades on your face. Includes your personal Magic Shade Chart . . . eight glorious shades of the New Armand Face Powder . . . purse-size container of the New Armand Blended Face Cream. Send 10c to Armand Company, Des Moines, Iowa.



BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

33 Copyright, 1941, Mead Johnson & Company, Evansville, Indiana, U. S. A.

FORECAST

The need for sex education and information is never more vital or important than it is during engagement and earlier years of marriage. Young men and women think and feel deeply in their desire to make their romance into a marriage which they feel ought to be the greatest experience in their lives. They ask questions, seek advice and read books. Some are able to find out what they want to know and make good use of their knowledge; some are not. Others realize but vaguely that their attitude and ignorance are responsible for much of the difficulty and the misery in their marriage. Some few realize too late that their own ignorance has led to unhappiness in the marriage of their children.

Emily Hartshorne Mudd has written the fourth article in a series prepared especially for HYGEIA. Read this enlightened feature in the August issue.

Among America's most important defensive weapons in any future war will be an army of citizens proficient in the art of home nursing. Unprepared in this respect in 1917, the United States through the Red Cross and several public agencies today is teaching thousands of mothers and daughters to take care of the sick at home and thus assist doctors and nurses in wartime or disaster emergencies.

Lewis H. Bowen reports on the Red Cross home nursing courses in an early issue.

The paralytic form of shellfish poisoning is a severe form of food intoxication, caused by eating mussels or clams at certain times of the year. The original source of the poison is found in a unicellular microscopic organism of the ocean, which the shellfish eat.

The poison contained in this organism is one of the strongest known. It belongs to the class of alkaloids such as strychnine, muscarine and aconitine. About one millionth of a gram is sufficient to kill a mouse on injection; the fatal dose by mouth for man is probably only a few milligrams.

Hermann Sommer and K. F. Meyer, M.D., discuss "Mussel Poisoning" next month.

Dental disease has been found everywhere that men are found; it is as old as the human race. Skulls dating back to remote prehistoric eras show teeth affected by caries, and jaws that in life suffered from pyorrhea alveolaris. But, although evidence is found that prehistoric man suffered from dental and oral diseases, he was—in relation to modern man—comparatively free from these ailments.

Peter J. Brekhus traces the evolution of dentistry "From Witch Doctor to Modern Dentist."

HYGEIA

THE HEALTH MAGAZINE

Published and copyrighted, 1941, by the American Medical Association. Edited by Morris Fishbein, M.D.

CONTENTS FOR JULY

COVER ..... Stephen Deutch

NUTRITION FOR DEFENSE—An Editorial 520

ATHLETE'S FOOT ... Marion B. Sulzberger, M.D., and Rudolf L. Baer, M.D. 522

SEX EDUCATION FOR THE ADOLESCENT
..... George W. Corner, M.D., and Carney Landis 525

PAINFUL SHOULDERS ..... Richard Kovacs, M.D. 529

BRITAIN'S AMERICAN HOSPITAL ..... Nancy Walburn 532

BY THE SKIN OF THEIR TEETH ..... S. R. Winters 536

DOES YOUR CHILD HAVE HEART TROUBLE? ..... Grace Igo Hall 539

DEVELOPMENT OF BLOOD BANKS ..... Carl W. Walter, M.D. 542

THE MARCH OF MEDICINE 546

VARICOSE ULCERS ..... Bernard Behrend, M.D. 549

EMOTIONAL DISTURBANCES OF APPETITE ..... Carl Binger, M.D. 550

SEVENTY YEARS YOUNG—A Poem ..... Vera Blood Fletcher 552

PATHWAYS OF MEDICAL DISCOVERY ..... Reginald Fitz, M.D. 553

WE ARE NOT CRIPPLES! ..... C. M. Cunningham Jr. 556

FOODS AND NUTRITION
- Storing the Surplus
  From the Office of the Council on Foods and Nutrition 561
- Stretching the Food Dollar ..... Martha C. Howard 564

QUESTIONS AND ANSWERS 571

BOOKS ON HEALTH 581

CHILD CARE
- Psychology A La Mode ..... Augusta Alpert 584

MEDICAL NEWS 592

HYGEIA, The Health Magazine, is published monthly by the American Medical Association, 535 N. Dearborn Street, Chicago, Ill. Yearly subscription price, $2.50; for foreign postage add 75 cents. Single copies, 25 cents. Volume 19, Number 7. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103 Act of October 3, 1917, authorized March 21, 1923. Printed in U. S. A.

Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy submitted. All rights reserved.

What can a man believe in?

GANGWAY!

It's somebody you ought to remember.

Leaping before he looks, as usual. But never a doubt about landing on his feet.

To him, tomorrow is a wonderful thing; full of eager hope and anticipation.

No pessimism here. No cynicism. Just a joyous excitement about all the things there are that need doing.

Recognize him now?

Of course you do.

He's someone you can believe in, always. He's youth; our hope; our future.

Every Squibb product—whether made especially for prescription by the medical profession or for proper everyday use in the home—bears an individual control number. It means that each detail in the product's making has been checked against rigid Squibb standards and recorded under that number at the Squibb Laboratories. Look for the name and control number when you buy. You can believe in Squibb.

E·R·SQUIBB & SONS

Manufacturing Chemists to the Medical Profession Since 1858

THE PRICELESS INGREDIENT OF EVERY PRODUCT IS THE HONOR AND INTEGRITY OF ITS MAKER

Copr. 1941 by E. R. Squibb & Sons

"The Adcomber"

looks at Hygeia ads

Speaking of picnics, the American Institute of Baking makes some timely suggestions on "what this country needs" . . . for both physical and mental health . . . page 567. Hear ye! Hear ye!

• • •

For "modern mothers," a light weight uplift bra with sterile pads to insure cleanliness, adjustable straps and back section to fit the changing figure. See Modern Mother . . . compare it . . . *read about it* . . . page 586.

• • •

Unsightly hair on face, arms or legs? Just ERASE IT with Bellin's Wonderstoen—and scratch *that* beauty problem off your list! Wonderstoen is safe, dry, dependable, free from injurious chemicals. More of interest on page 578.

• • •

Some of us lead . . . some of us follow in discovering new conveniences for living. But most women go modern in a hurry when they discover the comfort, freedom and cleanliness of Tampax internal sanitary protection. Page 577.

Footnote: Users claim Tampax is "a life-saver" in hot sticky weather, especially on vacations.

• • •

If it's authentic flavor you're looking for in canned fruit juices, make a memo to get Dr. Phillips' pure juices of Florida grapefruit and orange. Or that tantalizing blend of the two. An abundance of vitamins, too . . . Note page 570.

• • •

It's smart to claim the enjoyment of summer sun—and dodge that frightful "boiled lobster" look! Fend off those blistering rays this summer—make SUTRA (sun cream) a habit . . . as per sensible suggestion on page 559.

• • •

To the diet-bound: Here's a new variation on the old milk theme—delicious, digestible rennet-custards! No eggs, no cooking, takes but a moment, six tempting flavors—121 recipes for the asking. Page 566.

• • •

If you'd really like some inside facts—to help in the choice of your face powder and cream—turn to inside front cover and read "An Open Letter to Doctors about Cosmetics"—from a house which has recently made over 2800 tests. An eye-opener!

• • •

For more economy in cooking—less scorching and burning—more convenient "waterless cooking"—less oven heat and steam in your kitchen—more carefully conserved vitamins aud minerals in your foods—see the Ade-O-Matic Surface Oven, page 568.

THE ADCOMBER.

Who's Who IN HYGEIA

GEORGE W. CORNER, M.D., author of "Sex Education for the Adolescent," page 525, is director of the Department of Embryology of the Carnegie Institution of Washington.

Dr. Corner was born in Baltimore and was educated at the Johns Hopkins University (A.B. 1909, M.D. 1913). He interned at Johns Hopkins Hospital (gynecology) and subsequently taught anatomy in the medical schools of Johns Hopkins University, the University of California and the University of Rochester.

He has devoted himself chiefly to research in the structure and function of the ovary and in the physiology of the menstrual cycle. With his former student, Dr. Willard M. Allen, he isolated the hormone of the corpus luteum (progesterone) which controls the welfare of the early embryo. For this work and his general studies of the ovary he was awarded in 1940 the Squibb Prize of $1,000 by the Association for the Study of Internal Secretions.

Dr. Corner's chief hobby is the study of old manuscripts relating to the history of medicine, but he had written and lectured so much on this topic that he fears he has lost his amateur standing.

MARION B. SULZBERGER, M.D., author of "Athlete's Foot," page 522, was born in New York City in 1895. There, he graduated from the Franklin School in 1911. He attended Harvard University for one year, interrupting his studies to take a trip around the world. During his travels at this time he worked as a laborer, stoker, sailor, camel driver, etc. In 1916 he attended Massachusetts Institute of Technology; took aviation groundschool training. During World War 1, he was an instructor in aviation, United States Navy, and at the close of the war he was officer in charge of heavier-than-air flying at the Naval Air Station, Rockaway Point, Long Island, N. Y.

Dr. Sulzberger then continued his studies abroad, in Paris, Geneva and Zurich. In 1926 he passed the New York State Board Medical examinations and has been active in many dermatologic societies and specialized publications. He is author of two books and also of over 100 articles on medical research.

At present, Dr. Sulzberger is in service as Lieutenant Commander, Medical Corps, United States Naval Reserve.

NANCY WALBURN has been writing every since she found that people were willing to pay for her efforts.

The only comment of profoundly flattering nature she ever received was from a factory forewoman who said, "Girlie, you have a real good education, so I'm putting you upstairs on labels." "Upstairs on labels" doomed all her secret plans and hopes. In the guise of an unskilled worker, she was there to get a first-hand story arranged through Washington. This transfer would have cut her off from the source of her story just as completely as a transfer to Iraq. That she successfully outwitted her forewoman, got her story and maintained her ten-day camouflage was, she writes, not due to her "real good education" but to sheer, blind luck.

Somewhere, she developed an insatiable appetite for lectures, often so completely unrelated to her writings or clients that she believes it is with the wishful thought that she may hear a good mind in action.

Her article, "Britain's American Hospital," appears on page 532.

TO YOU

who read O.P.* copies of HYGEIA . . .

*O.P. (Other peoples') copies of HYGEIA make mighty popular reading. We know that! In doctors' offices alone, an indicated two million people read reception room copies each month. And in the schools, you find as many as 10 or 12 teachers "take turns" with a single copy.

But consider, is an O.P. copy as good as having your own? Can you realize the benefits of all this wealth of practical, authentic health data? Hygeia articles are not only worth reading—they're worth keeping and quoting. Regular readers agree that these timely articles on food, nutrition, child care, personal hygiene, disease, etc., have a day-to-day value in protecting health. You, too, may find that a single article will be worth many times the cost of your subscription. So why not pin a dollar to the coupon and have Hygeia coming to your house for you and your whole family to enjoy at leisure? Who knows, your copy of Hygeia too may become "an O.P. copy!"

TRIAL SUBSCRIPTION
6 Months.....$1

USE COUPON BELOW!

Coming FEATURES

DO YOU BELIEVE IN REPORT CARDS?
The latest opinions of educators on this old American institution!

THE HEART TO LIVE
Heart disease menaces thousands . . . but need it take all the joy out of life? A new and optimistic viewpoint!

OUTLETS FOR TENSIONS
"Let off steam" we must . . . but do you know how to "escape" without endangering your physical and mental health? Valuable pointers!

WHY ARE WE LOSING OUR TEETH?
Some intriguing facts about our "dental degeneration"—and some good hints about keeping those precious teeth.

LAYING AN OLD GHOST—THE MENOPAUSE
Just what happens at "change of life" . . . why it happens . . . how to meet it sensibly. Simply and directly told.

H-7-41

HYGEIA,
The Health Magazine,
535 No. Dearborn St., Chicago, Ill.

Enclosed is $1.00 for an introductory subscription to HYGEIA, the Health Magazine. I am a new subscriber. (Regular rate $2.50 per year.)

NAME _____ ADDRESS _____

NOW MARCELLE PRESENTS A NEW BEAUTY AID

CREAM Deodorant

Petal-soft your skin may be—and as needful of careful handling. Petal-fragrant you must keep it—especially in that treacherous underarm area, so malodorous when it goes untended...

To help keep these dainty qualities of your skin, Marcelle—for eight years distributors of Safe Cosmetics—now presents a new cream deodorant. EFFECTIVE because it contains aluminum sulphate. MILD because skillful cosmetic chemists have blended it of purest emollient ingredients. RELIABLE because it belongs to the Marcelle family of cosmetics—known to doctors and their patients everywhere.

Groom yourself with Marcelle's newest safeguard for loveliness. Protects from one to three days... Deals gently with dainty skins ... Helps keep you petal-fresh.

Try this new MILD deodorant. A full ounce jar—50c!

Marcelle COSMETICS

ACCEPTED FOR ADVERTISING IN PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION

1741 North Western Avenue, Chicago, Ill.

LETTERS FROM *Readers*

Scrapbooks

To the Editor:

For some time I have been thinking about the possibility of devising a method whereby my students in the survey course in biologic sciences could keep abreast of the most recent developments in this field. It has occurred to me that one way of accomplishing this would be to compile a planographed biologic scrapbook containing reproductions of some of the most outstanding popular articles on biologic subjects which have appeared during the past several years. These would be organized in units to correspond with the units in our textbook, "Man and the Living World" by Stanford.

This scrapbook would probably be planographed on 8½ x 11 paper, punched for looseleaf notebooks so that additions might be made from year to year. This would also enable students to add clippings of their own. We would plan to sell this scrapbook to our students at cost, as it would be published by the university [Huston].

Since your magazine frequently contains articles of the type I should like to include in the scrapbooks, I am wondering what arrangement with you would be necessary in order to enable us to reproduce selected articles. I would be glad to agree not to use articles less than six months or a year old, but I do not believe that we could afford to pay for the right to use this material and still publish the scrapbooks at a reasonable price.

I realize that it would be possible to have students subscribe to some popular science magazine instead of employing the scrapbook system, and I may have them do this also. However, this would not serve the same function as the scrapbooks. The scrapbooks would bring to them many important articles which have appeared during the past few years and which they would not get by subscribing to a scientific magazine and which at the same time are not included in their textbook.

V. A. GREULACH
Houston, Texas

Permission has been granted.—ED.

Raw Milk Menace

To the Editor:

In the article titled "The Raw Milk Menace" by Harold J. Harris in the March 1941 issue of HYGEIA, the statement is made: "With children, as well as with adults, vaccine treatment generally results in cure."

Isn't that a rather misleading and incorrect statement? It seems to be a statement which might hold false hope for many persons suffering from the disease.

DAVID H. ANDREW, M.D.
Baltimore, Md.

HYGEIA *regrets the appearance of this unduly optimistic statement. Vaccines have shown favorable results, but their ultimate value remains to be determined.*—ED.

Difficult Climate

To the Editor:

May I tell you how much we enjoy and appreciate this magazine? It is a great help to us as we have two children, 4 and 5, to bring up in this difficult climate.

MRS. R. M. CLEVELAND
South Rhodesia, Africa

No Time—No Facts

To the Editor:

Please do not send me any copies of HYGEIA after my present subscription expires.

I do not have time to read carefully all the "interest-sustaining" material in which the few medical facts imparted by the usual issue are so concealed that often they are missed if it is read cursorily.

VIRL BENNEHOFF
Long Island, N. Y.

To be caught far away from home without your glasses—and with no facilities for immediate replacement—is to lose precious days, interrupt and perhaps spoil a pleasant vacation.

Guard against it. By all means, before you leave, equip yourself with an extra pair. In this way you assure uninterrupted comfort for your eyes.

By having your second pair made with Soft-Lite Lenses, you may gain a new sense of rest and relief. These scientific lenses protect against over-brilliance.

Especially if you plan to be out in strong sun, the new *Sport Shade* Soft-Lite Lenses will be of great comfort. These good looking outdoor lenses neutralize glare without distorting color values.

Soft-Lite Lenses

Soft-Lite Lenses are made for the Soft-Lite Lens Company, Inc., New York, by Bausch & Lomb.

NUTRITION

THE WINNING of a war is a race for food. Month by month agencies in every one of the leading nations of the world are carefully estimating food supplies. At this moment it is reported that all of the countries of Europe have less food now than they had in peace time, and that the outlook for the future is serious. The Germans, it is said, are better off than they were in 1914-18. What food is available in countries that are occupied by Germans will depend on the Germans and on the British blockade. Germany itself has taken food from countries that it has occupied, but as their supplies diminish so will the supply of food in Germany. Obviously, much depends on what Russia will supply or permit to pass across her borders.

Good food makes sound bodies. Brigadier General Hershey, addressing the National Nutrition Conference for Defense, said that his observations indicated that at least one third of the men rejected by the Selective Service Boards for physical causes had obvious defects resulting from either undernutrition or wrong nutrition. The popular writers have characterized these two forms of lack of nutrition

U. S. D. A. Photograph by Forsythe

Protective foods, such as milk, eggs, butter, whole grain cereals, leafy green vegetables, flour and citrus fruits, are essential for those people whose diets are now rated as poor.

for DEFENSE

as "hollow hunger" and "hidden hunger." Hollow hunger is that which results from starvation; hidden hunger results from lack in the diet of ingredients necessary for health and growth.

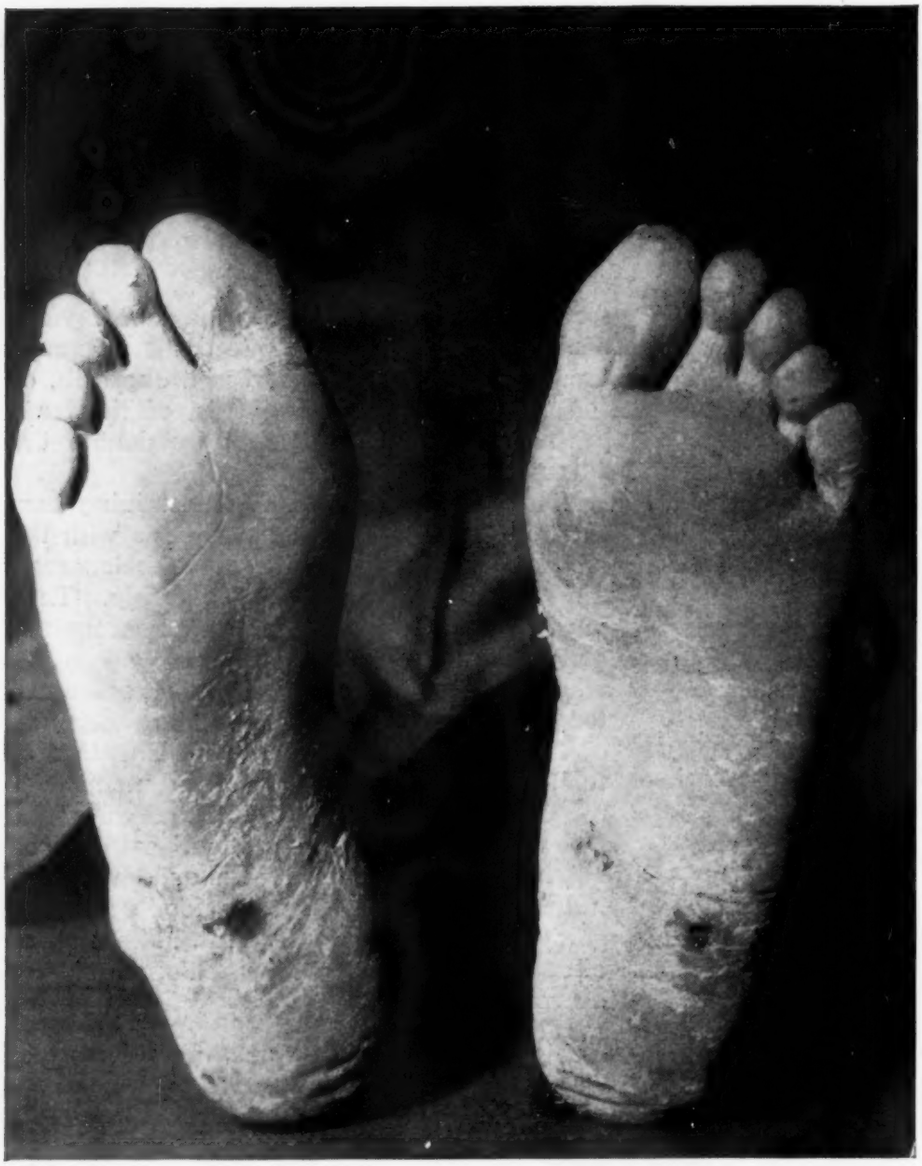
On May 26-28, more than eight hundred physicians, nutrition experts, public educators, teachers and representatives of the industries engaged in the production, manufacture, and distribution of food assembled in Washington for the first National Nutrition Conference for Defense. President Roosevelt called attention to the significance of adequate nutrition for building man power. In a message to the Conference, he said: "We do not lack, as we will not lack, the means of producing food in abundance and variety. Our task is to translate this abundance into reality for every American family." This inspirational statement set the key for the first national conference on nutrition ever held in this country.

The chief responsibility rests on Mr. Paul V. McNutt, who is Coordinator of Health, Welfare and Related Activities. The questions which were placed before the special sections of the conference, as outlined by Mr. McNutt, concerned the responsibility of the federal government with respect to nutrition, the relationship of undernutrition to farm supplies, the provision of food for Britain, new methods of distribution of basic foods, the problem of nutritional deficiency diseases and the mechanism of education in solving this problem.

Out of this conference will, no doubt, come a statement of nutritional standards. Experts in home economics have indicated that it is especially essential to bring protective foods, such as milk, eggs, butter, whole grain cereals, flour, leafy green vegetables and citrus fruits to all those people whose diets are now rated as poor. Nearly half the nonfarm families in this country, according to Hazel K. Stiebeling, have diets that are only fair because the diets do not include the necessary protective foods. If the average consumption of these foods could be raised to the level of those whose present diets are rated as good, there would be a great increase in the consumption of these essential foods. Indeed, the consumption of milk would be increased one fifth, of the citrus fruits by two thirds, of the leafy green and yellow vegetables by double the amount.

Much of the problem of determining how these food levels can be raised rests with the economists. On the medical profession rests the need for direction and leadership. They must determine the foods that are required and the persons who require them. In his address to the National Nutrition Conference for Defense, Dr. Russell M. Wilder, chairman of the Committee on Foods and Nutrition of the National Research Council and member of the Committee on Foods and Nutrition of the American Medical Association, emphasized special needs of certain groups and gave some indication as to how modern food science is going to meet this requirement. The method of attack is to improve the nutritional qualities of certain staple foods which, because they are inexpensive, form an unduly large proportion of the diet of families with small incomes. Thus, flour and bread are to be fortified with some of the vitamins, with calcium, and perhaps with iron. The millers will, in time, be able to develop a white flour of the type enjoyed by Americans which still contains the necessary vitamins and mineral salts of the whole grain. Oleomargarine will increasingly be fortified with extra vitamin A which is provided by butter. More attention must be paid to securing proper amounts of protein through wider distribution of lean meats and of the proteins contained in peanuts and soy beans.

The problems of nutrition intimately concern every person in our population. The medical profession has pledged its full support to the solution of these problems. Food today represents the largest single item in our national budget. Concentration of attention on the problems that exist and the methods available for solving them will unquestionably lead in the future to a nation better fed and, therefore, much more physically fit.



The fungous growth of athlete's foot produces a typical scaling and blistering reaction. Note how the areas of least pressure are the most strongly affected.

ATHLETE'S FOOT

By MARION SULZBERGER and RUDOLF BAER

ALMOST EVERY ADULT has—or has had—either a mild or a more severe form of athlete's foot, just as most persons of adult age have undergone exposure to infection by the tubercle bacillus and tuberculosis. But, just as in tuberculosis—and in many other diseases as well—by no means all of those persons exposed necessarily develop an active form of the disease. The majority, fortunately, get mild infections which remain quiescent. Nevertheless, the active form of athlete's foot is today the third most common skin disease seen by the skin specialist during the summer, and the fifth most common disease in winter.

Athlete's foot is caused by certain types of living germs. These germs are larger and more highly developed than bacteria or bacilli. They actually represent a relatively low form of plant life known as fungi. The fungi which most commonly cause athlete's foot are called

This form of blistering eruption is caused by an allergic sensitivity to shoe leather, not by the fungous growth of athlete's foot. Note that the most severe irritation is on the tops of the toes, not on the surfaces between them.

The particular fungi causing athlete's foot are thought to be constantly present on every one's feet. They must have dead, moist material to proliferate, and grow best in a warm environment. Note the growth between the toes.

trichophytons or epidermophytons, and are closely related to yeasts and mushrooms. The skin diseases produced by these germs bear the pseudoscientific names of ringworm or athlete's foot, and the scientific names of tinea, dermatomycosis, dermatophytosis, etcetera.

There are two outstanding characteristics peculiar to the particular fungi causing athlete's

foot: they cause diseases only of the skin and not of other organs, and they are able to multiply only in dead tissue, not in living cells or living tissues. This second characteristic explains why athlete's foot usually starts in the toenails, or between the toes, or on the soles of the feet—places where there is an ample supply of dead horny or moist material which offers the soil for the multiplication of the germs.

The peculiarity that these germs require dead material for their growth explains also the fact that sudden attacks appear most commonly in the summer; at swimming pools, in gymnasiums, after a long hike or march, after a long, strenuous or exciting day of walking or standing, after wearing ill-fitting shoes, rubbers or rubber boots, in men who have been standing watch or been on duty in trenches, commonly called trench foot. These activities and exposures increase the moisture, sweating, scaling, and the accumulation of soggy, dead material on the feet. This dead and soggy material presents the favorite soil for the fungous germs. Then these germs—which almost every one constantly harbors on his feet, around his toenails, in a small callus, about a soft corn, or in a skin-fold or crack between the toes—these lurking germs suddenly find a considerable quantity of new dead material suitable for their growth, together with the stimulating environment of heat and moisture. Quiescent and sleeping, perhaps for years, the fungi may then suddenly become active, multiply and spread, thus producing acute forms of the disease known as athlete's foot. In addition to these simple local factors which tend to produce acute attacks, there are undoubtedly many known and unknown, general and complex conditions—excessive sweating, nervous influences and diabetes—which increase the susceptibility of certain persons at certain times.

The first signs of active athlete's foot are usually increased scaliness or sogginess between the toes, or itching and blistering on the soles of the feet and on the sides of the toes, or merely increased itching and burning in these areas. From this point on, there may be either a return to normal, or a progression of the disease. This progression can take the form of large, blistering, raw areas, or of severe swelling, redness and blistering. Eventually, however, scaling and thickening usually follow. The acute, swollen, blistering stages look, feel and act similar to ivy poisoning.

The activity is usually confined to the areas between the toes and to the soles of the feet. But the eruption may spread to any part of the feet, and even to other areas. At any time during the course of an active stage on the feet, it is not uncommon to see blistering eruptions of the hands, or simply scaling of the hands. In exceptional cases, reddened, blistering and scaly eruptions can appear all over the body. However, the face and scalp almost always remain immune to this form of skin disease.

The eruption which appears on parts distant from the feet is usually a secondary eruption and is different from that seen on the feet themselves. Eruptions distant from the feet are, as a rule, not due to local infection by the living fungi, but are attributable to the spread or dissemination and distribution of harmful substances which are produced by the actual fungous infection of the feet. The fungi themselves are usually found only on the feet, and are absent in the secondary eruptions of other parts.

Because the eruptions of athlete's foot can look and act so much like many other skin diseases, the diagnosis may be extremely difficult. Also, athlete's foot is often combined with other infections and with other skin diseases. Thus, a person with sogginess between the toes may find his athlete's foot infection combined with—and often appearing at the same time as—an eruption from friction, stocking dyes, or shoe leather. A man working at a soda fountain may experience not only a flare-up of athlete's foot and a few accompanying blisters or scaling on the hands, but he is likely to suffer further blisters and irritations from the soap, water, grease and syrups, as well as from other germs he encounters in his occupational activities. A housewife or a factory worker may have a few blisters of secondary athlete's foot on the hands; and into these lesions will grow the streptococci causing erysipelas, or the staphylococci causing boils.

Thus, the active phase of the fungous infection known as athlete's foot is often either the percursor, companion, or follower, of other skin diseases. The exact diagnosis of these combinations of athlete's foot with other skin diseases is rendered exceedingly difficult or impossible by the circumstance that the fungi, which are always present and waiting for new dead material, often find this material in the changes produced by the other, nonfungous skin diseases. Despite these difficulties, the well-trained d e r m a- *(Continued on page 579)*

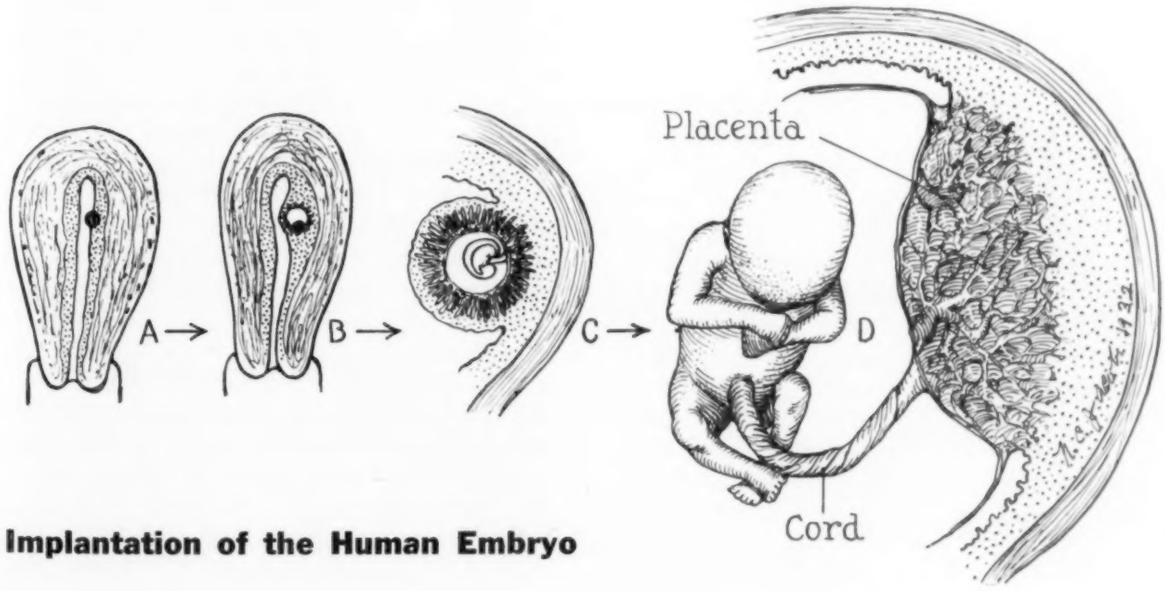
Sex Education

FOR THE ADOLESCENT

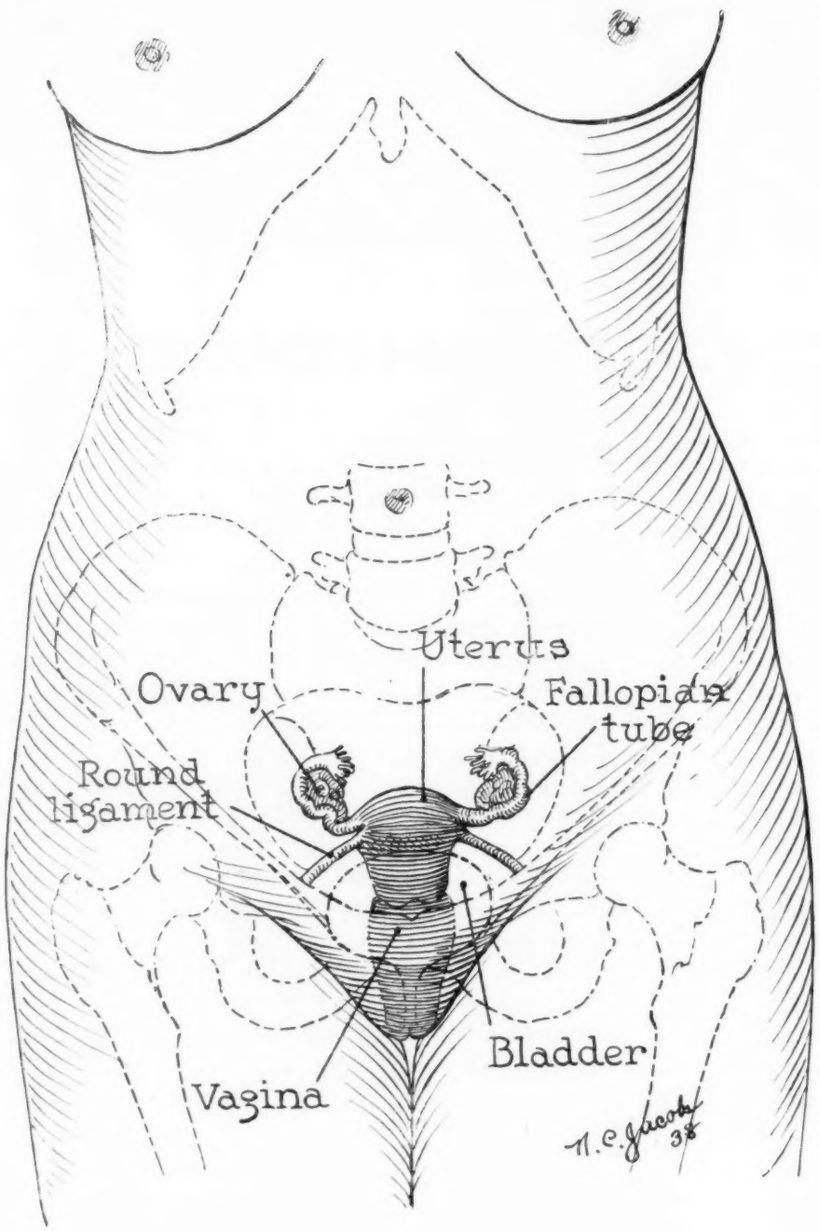
By GEORGE W. CORNER
and CARNEY LANDIS

IN TEACHING the adolescent boy and girl about sex and reproduction, the facts are important, but the way they are taught is of more importance. The parent is not going to be the only one who tells his children about sex. By the time some parents get around to acquainting their children with the facts of life, they will have picked up all sorts of information—and misinformation—at school, on the streets, from books, magazines and scandal sheets. There is an old story of a father who said "Sit down, son, I want to talk with you about sex." The boy calmly replied, "All right, father, what is it you'd like to know?"

The special task of the father and mother is not merely to provide a formal lecture on the structure and functions of the reproductive organs. Neither can they provide cut-and-dried information about problems and dilemmas which occur more and more often as the children grow older. They have a much larger and more important duty, which is to show by their everyday life and their attitude, as well as by their answers to direct questions, how the well-adjusted adult views the whole subject of sex and fits it into its proper place in life's general scheme. Wise parents show by their explanations and attitudes how the decently interested person thinks and talks about sex, what they regard as worth talking about, as well as those things that they regard as best ignored. There are all too many others from whom the child may learn the ways of indecency, morbidity and superstition.



Implantation of the Human Embryo



Female Reproductive System

In an ideal educational system having a thoroughly sane attitude about the matter, parents would not need to teach the biology of sex, for it would be taken up in due course at the various stages of science teaching in the schools as a part of the general training in biology. This is already being done excellently wherever competent teachers have been given the opportunity. The lucky parents of children so taught have a background against which they can more easily develop socially approved values and attitudes in their children.

When the children are getting no such biologic instruction in the school, the parents should make provision for such training during the early adolescence of their child. This sex instruction should not be set apart as something special, to be discussed with lowered voice or embarrassed semisecrecy. Whatever is said by the parent to the adolescent child at home should as far as possible come up naturally, as the subject develops and as the child shows his interest. If boys and girls are interested in nature, the reading at home of one of the available books on general biology or sex and reproduction should serve as a point of departure in this educational venture.

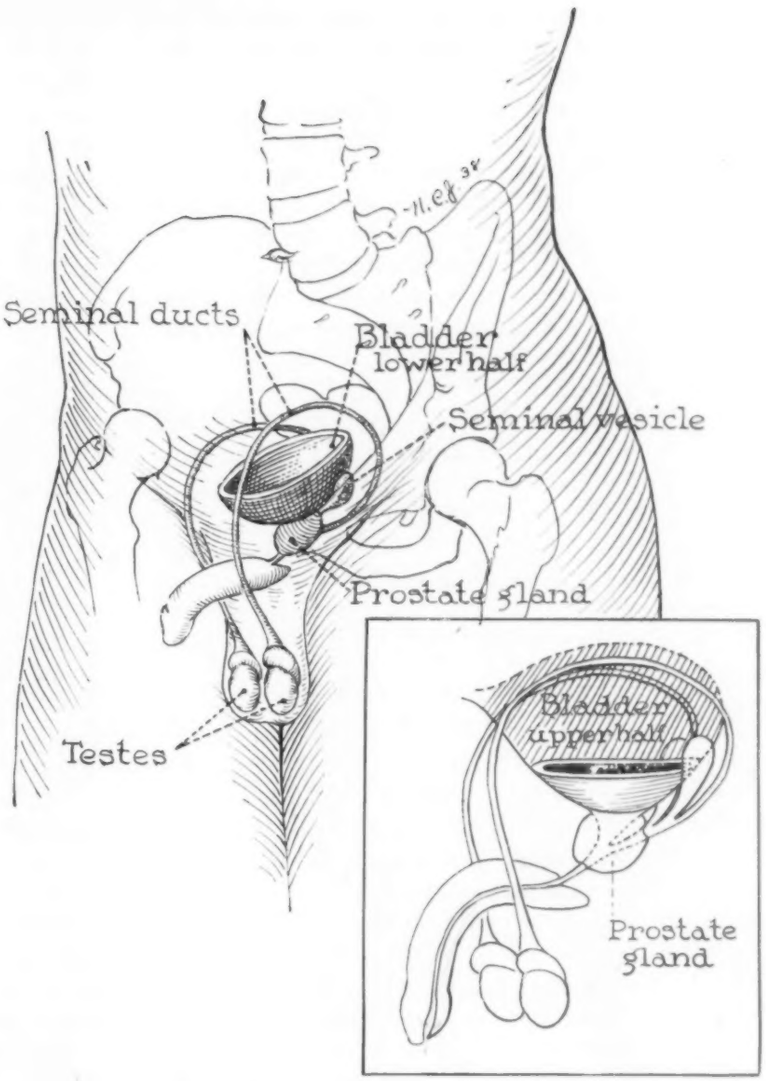
At the age of adolescence it is of importance to keep a balance between physical and romantic aspects of sexuality. Sex makes problems for the human race precisely because we are a mixture of animal and spiritual qualities. In everything we do, most of all in deep-seated affairs like sex behavior, we are always under the necessity of combining and balancing our two natures. Whoever undertakes to describe the anatomy and physiology of the sex organs, and the physical features of childbearing and birth, must keep in mind all the good and beautiful things that go with human mating and family life. He must try to realize and make his children realize that one cannot separate these phases of our nature, but must accept and use them properly together.

Biology of Reproduction

What should first be taught about the anatomy and physiology of sex? The answer is that boys and girls in their teens are genuinely interested in the biology of sex and ought to get, at home or at school, a good review of the whole subject. They ought to

see the eggs and the sperm cells of animals, not only in pictures but the real thing. To illustrate the egg and its development, the eggs of frogs or salamanders are ideal. They can be found in almost any pool in early spring, and if brought into the house in a bowl will go on developing and will pass through the whole magical process from egg to tadpole. To show the children the male germ cells (the spermatozoa) is not so easy. This requires a microscope and a parent who has studied biology, or the friendly aid of a teacher or student of biology, or of the family doctor. Good slides, already prepared for use with a microscope, of an ovary (the cat is best) and the testis and the sperm cells can be bought for 50 cents or $1 each from biologic supply houses.

When an egg is fertilized by a sperm cell, each of these cells brings with it the carriers of heredity (genes), half from the mother in the egg, and half from the father in the sperm cell. Thus, the new life begins with a full quota of genes, and will inherit some traits from his paternal ancestors and some from his mother's line. The way in which this occurs through the union of tiny structures in the egg and sperm cell, the gene-carriers or chromosomes, is extremely interesting but impossible to show without a good microscope. Good slides are available for this purpose and, with the aid of a microscope, the chromosomes can be readily seen in slides of whitefish eggs.



Male Reproductive System

The Male Reproductive System

Human beings, like the other animals, develop from eggs and sperm cells. To make these cells the male has testes and the female has ovaries. In the simple diagram of the human male reproductive system, the two testes are shown in their sac, the scrotum. The parent can describe how each testis is composed of numerous, fine, coiled tubules, totaling about an eighth of a mile in length if straightened out. In these tubules the sperm cells are produced by the division of the cells that line the tubes. The sperm cells are extremely small. Many hundreds of them could be placed on the printed period at the end of this sentence. In shape they are something like tadpoles, having a rounded head and a long tail which propels them when swimming by a whip-like motion.

The sperm cells pass out of the testes into the seminal ducts, one of which drains each testis. These ducts pass into the pelvic part of the body, as shown in the diagram, and run below the urinary bladder to enter the penis at its base. Through the penis the seminal and urinary passages form one tube, the urethra. The seminal vesicles (offshoots of the seminal ducts), and the prostate gland, through which the combined seminal and

urinary passages pass, contribute some of the ingredients of the seminal fluid in which the sperm cells swim.

In the act of mating, the sperm cells are placed in the female reproductive canal where they make their way upward to meet the egg cell. Sperm cells probably live only a few hours in the female reproductive canals.

The special characteristics of the male sex—larger skeleton, deeper voice, masculine type of hair on face and body—are governed by the action of the male sex hormone, testosterone, which is produced by the interstitial cells of the testes. Soon after a boy reaches the age of 14 the testes begin to produce this sex hormone and it is carried in the blood to other parts of the body where it causes the development of the masculine traits. The technical name of this period of development is puberty, from a Latin word which originally referred to the growth of hair in the groin.

The Female Reproductive System

Shown above is an illustration of the principal organs of the female reproductive system. The ovaries are two rounded bodies about 1¼ inches long situated on opposite sides of the uterus or womb. In the ovaries are a number of rounded cavities called the graafian follicles. Each follicle contains an egg cell. In the mature female, about once a month one of these follicles enlarges, bursts and sets free its egg, which passes into the fallopian tube or oviduct. The human egg is about 0.006 of an inch in diameter and can just be seen with the unaided eye when it is placed in a dish of clear water.

Besides making the egg cells, the ovaries, like the testes, also make chemical substances which they put into the blood stream to influence the rest of the body. The most important of these is called the female sex hormone or technically estrin, or estrogenic hormone. This substance has the function of bringing about the secondary sex characteristics of the woman. That is to say, it controls the growth and development of the external genital organs, the uterus and the breasts, thus producing the feminine figure and feminine type of voice and hair.

When the follicle discharges its ovum, it is converted into a special temporary gland of internal secretion called the corpus luteum which secretes a substance called "progesterone," which has to do with the welfare of the embryo during its early development.

The two fallopian tubes lead from the ovaries to the uterus, a hollow, thick-walled organ about 3 inches long, shaped like an inverted pear. It is lined with a soft membrane into which the attachments of the embryo can grow.

The uterus opens at its lower end into the vagina, a canal lined with a smooth membrane. The vagina opens outside in the external genital region which is called the vulva. The vulva is formed by two thick folds of skin, superimposed on fatty tissue. Within these folds are two smaller folds, the labia minora. These meet at the front in a small organ, the clitoris, which is the diminutive equivalent of the penis of the male. The vaginal canal is partly closed, just inside its opening, by a membrane called the hymen. At the first mating the hymen is stretched or torn. The outlet of the urinary bladder, the urethra, opens between the labia minora, in front of the vaginal opening.

The Embryo

In the act of mating the sperm cells are deposited in the vagina, and make their way through the uterus to the fallopian tubes. If an egg has recently been discharged from the ovary, a sperm cell enters it (act of fertilization) and causes it to divide into two cells, then four, and so on through a process of subdividing and specialized growth of certain cells, until it becomes an embryo.

The descent of the fertilized ovum to the uterus, its attachment there and development into a new human being is a fascinating story. Also shown above is a diagram of this development. An exhibit of human development, with actual specimens arranged by the Medical School of Loyola University, attracted huge numbers of visitors at the Chicago World's Fair of 1933-34 and is now installed permanently at the Chicago Museum of Science and Industry. Similar exhibits should be set up in schools and museums all over the country since this is one of the best ways of acquainting children with the anatomy of sex and biology of human reproduction.

Young people are always keenly interested in the appearance of the early embryo, its gradual attainment of human form and its growth through the nine months of pregnancy. It is important that they should also understand something of the way in which the embryo is attached to the mother's uterus by means of the placenta. *(Continued on page 588)*

Several small bursae or lubricating sacs beneath the shoulder muscles and under a few of their tendons enable them to move freely with a minimum amount of friction.

PAINFUL SHOULDERS

By RICHARD KOVACS

Stephen Deutch

MOST PEOPLE do not appreciate sound limbs and the ability to employ them comfortably in daily tasks until some mishap deprives them of their use. Vividly illustrative is a stiff and painful shoulder—one of the most frequent body ailments.

The point of the shoulder projects outward from the side of the body, and for this reason it often suffers painful injury. The shoulder joint is the body's most freely movable joint but, because the head of the shoulder moves on a shallow cup formed by an extension of the shoulder blade, it has less stability and protection than any other large joint. This is the reason why dislocations of the shoulder occur so frequently. Shoulder movements are produced by nine muscles and the presence of small lubricating sacs or bursae under these muscles and under some of their tendons enables them to move with a minimum

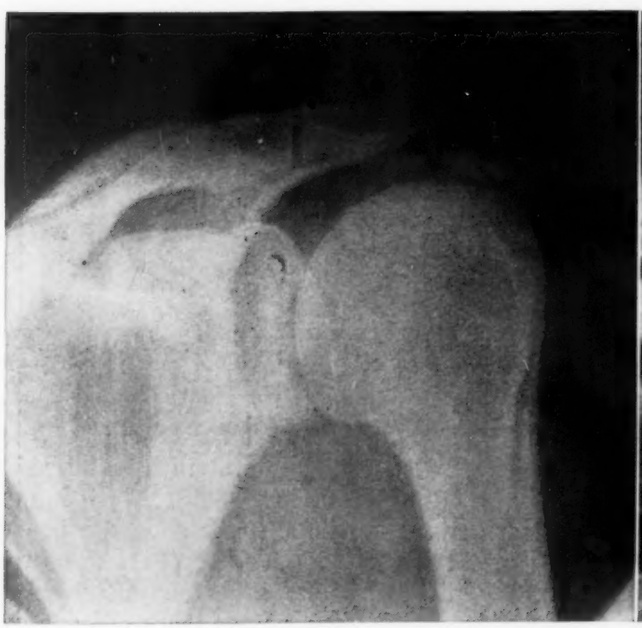
of friction. These bursae frequently become inflamed and since there are several large nerve trunks and many blood vessels situated near the shoulder the intimate association of so many important structures, muscles, tendons, nerves, bursae with the capsule and other parts of the joint explains why even minor inflammations or injuries to the shoulder may cause so much discomfort.

After comparatively mild injuries to the shoulder such as a light fall, wrench, strain or blow, severe pain may develop not only in the shoulder, but along the entire arm. The reason for this is that in every injury small blood vessels are broken. Blood pours out not only under the skin, forming the tell-tale black and blue marks, but also on the inside, among the muscles, tendons and nerves. Swelling and pain follow, resulting in so-called reflex stiffness or muscle spasm. But until the blood is absorbed, the painful irritation of the nerve endings may continue. For the same reason, fibrous adhesions may develop round the muscles which not only continue the irritating pressure but also cause muscular stiffness and wasting.

Still other complications may follow minor injuries such as inflammation and swelling of the joint capsule, inflammation of tendon sheaths and various degrees of nerve irritations, or neuralgia and neuritis. Only a careful study of each case can determine the relation of an original bruise, muscle strain or joint sprain to these complications. Some of these chronic disabilities have been described, according to their cause, as golfer's shoulder or football shoulder.

In acute injuries or other painful conditions of the shoulder, once the proper diagnosis has been established, rest is the most important routine treatment advised by physicians. A sling which supports the elbow and eases the weight of the arm on the painful shoulder is helpful. An ice bag or cold compress applied to the swollen parts immediately after an injury usually relieves pain; it also checks the outflow of more blood from torn blood vessels. After a day or two, mild heating by a heat lamp or electric pad is employed to give comfort and speed absorption of extruded blood and lymph. As soon as the acute pain is relieved and no complications demand further rest for the injured shoulder, gentle massage and gradually increased exercise may be started. These measures tend to hasten the absorption of the blood, to prevent adhesions and to overcome stiffness. In more severe injuries—when tendons and muscles have been ruptured, or the joint capsule has been torn or bones fractured—the period of rest must be extensively prolonged. In such cases undisturbed knitting of the torn parts must be maintained by immobilization of the parts.

The most frequent and most painful affection of the shoulder is bursitis, an inflammation



An x-ray photograph of calcified subdeltoid bursitis, showing large, chalky deposit on top of shoulder bone.

The same region, photographed six weeks later, shows deposit no longer exists after diathermy treatments.

of the lubricating sacs or bursae of the shoulder. The sac most commonly involved, the subdeltoid bursa, is located under the bulging shoulder muscle and directly over the head of the shoulder bone. Bursitis is usually caused by repeated exertions, or a fall, and usually begins with a mild inflammation and swelling. Later, adhesions to the neighboring parts occur, but even at this stage there is only slight pain and stiffness. Still later, a gradual deposition of calcium salts (chalk) forms around the sac. At the next stage, extreme tenderness with almost unbearable pain and complete stiffness of the shoulder appears rather suddenly. Typical of calcified bursitis, examinations show tenderness below the point of the shoulder and x-ray pictures reveal a chalky lump next to the bone. Severe cases of bursitis considerably tax the endurance of patients and the curative skill of their physicians. In the acute stage, physical measures such as infrared rays and mild treatments of diathermy are helpful in giving relief from pain. In severe cases, sedative medication may be required so that the patient can obtain some ease and sleep until other treatments are effective. Absolute rest and protection of the arm against accidental movement or pressure of bandages must be provided by a sling.

In practically all of these cases of calcified bursitis, rest and suitably increased heating by diathermy bring about definite relief of pain and overcome stiffness: The progressive disappearance of the calcified mass can be observed in a series of x-ray pictures. Some physicians advocate surgical measures in acute cases, consisting of inserting a needle into the bursa and washing out its contents with a saline solution, or injecting an anesthetic solution into the bursa. The earlier method of cutting down on the bursa and removing the calcified material is seldom performed, since such good results can be accomplished with simple physical treatment.

So-called rheumatism of the shoulder may mean a variety of conditions; a low grade inflammation of muscles, tendons, nerves, or the joint itself. Simple muscle ache may follow exposure, driving or sleeping in a draft, or local infection in the body. The same causes may bring about irritation of some of the nerves about the shoulder. Then, symptoms of nerve pain, neuralgia or neuritis appear. Generally speaking, the term "neuritis" is loosely used to indicate any pain along the arm. In neuritis, there is a more or less continuous pain without stiffness or restriction of motion. The neuritic pain radiates down the forearm and even into the fingers and sometimes there is a sensation of "pins and needles" along the arm.

Neuritis along the arm may be caused not only by repeated exposure, strain, or a toxic condition somewhere in the body, but also by arthritic deposits in the vertebrae—in the bones of the spinal column which press on the nerve roots emerging between them. The effective treatment of neuritis must be based on finding and eliminating, as far as possible, its cause. In acute neuritis, as in bursitis, physical measures usually give effective relief; but they must be cautiously applied. Vigorous massage or manipulation must be avoided because they are likely to "stir up" pain of sometimes torturing intensity.

The role of so-called focal infection in causing painful conditions in various parts of the body, including the shoulder, has been exaggerated during recent years. Seasoned medical opinion no longer believes that doubtful shoulder pain, rashly labeled neuritis, should lead to removal of all suspicious teeth and tonsils. While some patients have undoubtedly been cured of obscure pains by such procedures, relief also can be explained by a "protein shock" through absorption of some of the destroyed tissue particles into the blood stream, as well as by the mental effect of the operative procedure. In the majority of cases, there is not enough causal relation between a supposed focus of infection and the painful condition; certainly, there is little statistical evidence to warrant the wholesale "slaughter" of tonsils and teeth. In the light of present day medical experience, such operative procedures in painful shoulders, or other rheumatic affections, are only to be considered when there is definite evidence of a real infection, and when the age and condition of the patient permit a safe operation.

Chronic arthritis of the shoulder joint is in itself a rare occurrence. It is usually part of a general arthritic condition in which more than one joint is involved. However, one acute type of arthritis—usually confined to one large joint such as the shoulder—is due to gonorrheal infection and yields either to the newer forms of chemical treatment or to intensive heat treatment. In some cases, artificially induced fever of 106 F. is required and must be maintained for several hours and repeated frequently. Another in- *(Continued on page 560)*

The second group of American doctors and nurses to serve in England.

A patient and nurse at the American Hospital.

BRITAIN'S

IT WAS EARLY DAWN following a heavy air raid when the emergency call from London came through to the British War Relief Society's American Hospital in Britain: "Prepare for forty extra emergency patients. Ambulances on way."

Since the incoming toll of a night's casualties are usually heavily operative in nature, orders were given for a "stand-by" preparation in the operating room. To accommodate the new intake and to expedite their care, the surgical wards were cleared of all not-so-urgent cases. Rehabilitation of limbs, bomb-shattered or badly infected, for which the American Hospital is already achieving a reputation, necessitated immediate action.

All was in readiness when the dusty ambulances roared up. Out came not mangled

One of the portable x-ray machines in use, a part of the equipment sent to British hospitals.

AMERICAN HOSPITAL

By NANCY WALBURN

RAF flyers or civilian victims but forty expectant mothers, looking amazingly self-possessed and calm, despite the harrowing night. Inquiry developed that the young mothers-to-be, reported by air raid shelter physicians or matrons as in immediate need of hospitalization, had been collected all over London.

This is the story told by Dr. Philip D. Wilson, under whose direction the American Hospital was opened in the fall of 1940. Accompanied by an all-American staff of surgeons, physicians and nurses, Dr. Wilson went over last August to open the institution "somewhere in England." Maintained by the British War Relief Society, the services of the hospital are a gift from America.

"While the young mothers, at once the grateful recipients of our emergency care, shared the joke on our whole awaiting staff," continued Dr. Wilson, "this incident illustrates more than just that. At no hour of the day or night are our incoming patients predictable. While it is true that most of our patients require orthopedic care, our highly specialized staff is often pressed into other types of service. Our doctors and nurses must have a high degree of adaptability and ingenuity."

Nothing in England has remained static, not even the specialized type of medical service to which an institution was formerly free to devote its efforts. To meet the war's emergency influx, the classification of hospitals in the metropolitan zone of London changed over night. Their customary patients, shuffled and reshuffled like a pack of cards, were transferred to more distant parts.

The Ministry of Health assigned to Dr. Wilson and his American staff of specialists in orthopedic surgery sections of a hospital in Basingstoke totaling 300 beds. This hospital, located about 50 miles southwest of London, was originally designed as an asylum for mental patients. After the war broke out the Emergency Medical Service had removed these patients elsewhere in the interior and converted these buildings into a general hospital.

There is no specific type of patient that comes to the American Hospital—they come from the war in the air, on land and at sea. When an RAF flyer is forced to bail out of his plane in flames he has to remove his head protector and gloves to do so. Consequently, many flyers are horribly burned about the face and on the hands. This is one of the most tragic tolls taken by warfare in the air. Many of these victims are brought to Sir Harold Gillies' Facial Maxillary Center at Basingstoke. There, the plastic surgeon of the American Hospital is called on to perform miracles.

From the sea come survivors of submarine sinkings of British ships and infrequently from rescue patrol boats. These boats, equipped by the British War Relief Society with resuscitation and first-aid appliances, hot drinks and dry clothing and operated by the British Sailors' Society, patrol the sea to rescue survivors of submarine warfare. Until this aid, sent by American contributors and manned by the survivors' fellow seamen, comes in sight, all too often these men have clung to rafts or kept afloat at the mercy of the sea.

From the bomb-tortured land, under blitzkrieg warfare, however, come the American Hospital's major casualties, civilians who, with unbroken courage, continue the normalcy of their daily routine until stricken down. After first aid elsewhere, these men, women and children are brought daily to the hospital's door for whatever relief the medical experts can afford. When their condition warrants and they no longer need special medical attention, they are sent to convalescent homes or are discharged entirely. Patients with bomb injuries and those paralyzed from the effect of severe blasts must be taught to walk again.

The heavy casualties from flying shrapnel are due, Dr. Wilson explains, not only to its power to destroy but also to the fact that flying splinters enter all parts of the body, shattering bones into many pieces. All the ingenuity that an orthopedic surgeon possesses must then be brought into play to repair these shattered bones so that these un- *(Continued on page 570)*

Life, apparently, has some gay moments at the American Hospital in England.

Salvaging bombed English hospitals is part of the work of the British War Relief Society.

After the operation: A patient at the American Hospital, England, seriously bomb-wounded.

By the Skin of Their Teeth

By S. R. WINTERS

OUR 1941 DRAFTEES present a striking contrast to the primitive American Indian in many ways, but in one characteristic the Red man held the advantage. In 200 ancient skulls recently excavated in restoring St. Augustine, Fla., oldest city in the United States, only one decayed tooth was found. In startling comparison, 22 per cent of American men drafted for military service have been rejected because of dental ailments.

The highest number of men rejected because of unsatisfactory teeth were from the 3rd Corps Area, comprised of Maryland, Pennsylvania, Virginia and the District of Columbia. The percentage of refusals because of dental troubles was lowest in all Southern states. The large ratio of Negroes drafted from the South furnishes the chief explanation, since Negroes, in general, have much sounder teeth than whites.

The fact that no dentist served on any local examining board throughout the country during the first months of the draft caused many men to be passed who were later turned down by a dental examiner on the army induction board. Such incongruity has been remedied by the assignment of a dentist to assist the examining physicians of every local board. This will require the services, without compensation, of approximately 10,000 dentists.

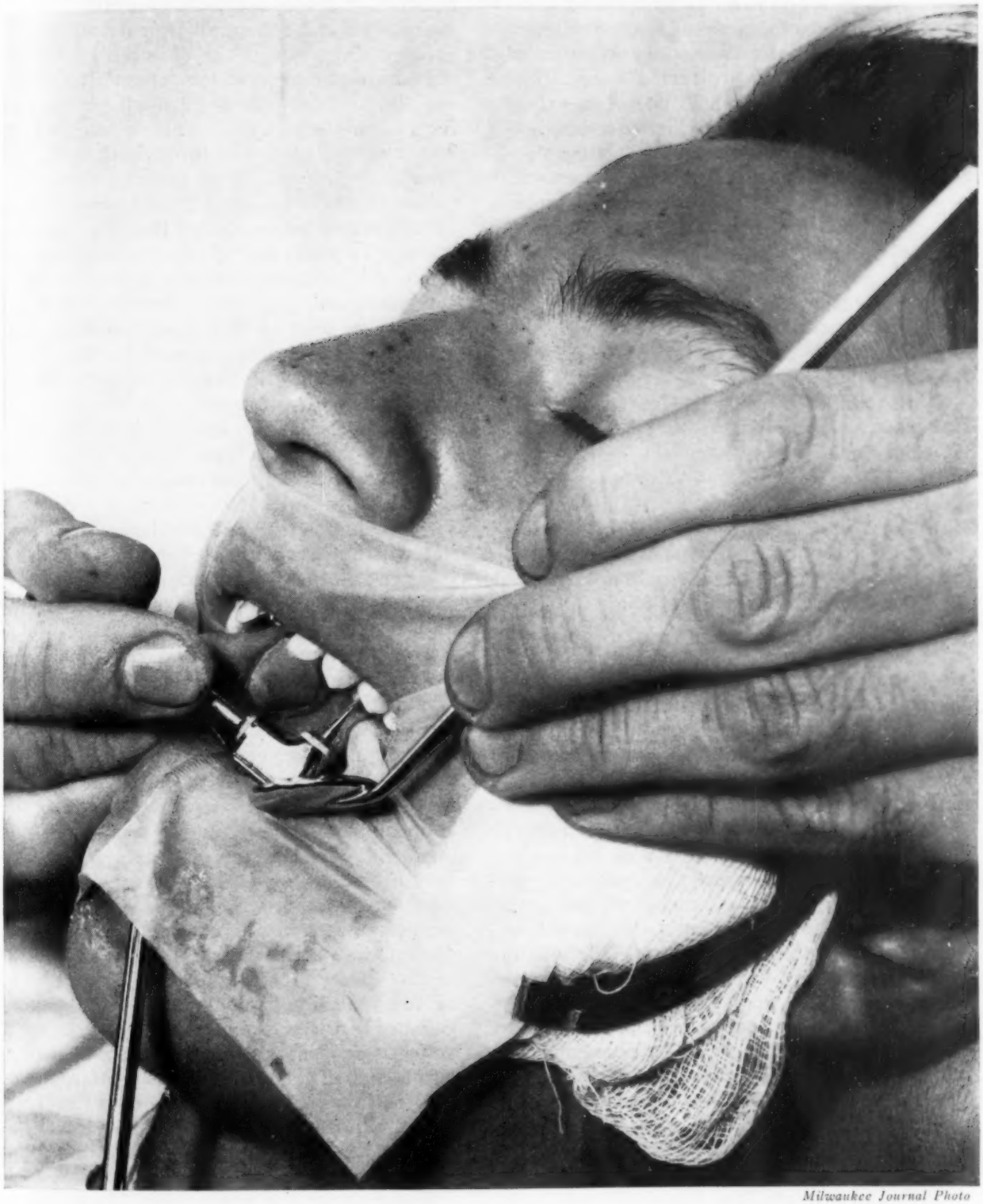
To be accepted for service in the United States army, a man must have a minimum of 12 "good" teeth. Not only must these 12 teeth be sound, or capable of being put into good condition, but they must be so placed in the mouth that they "oppose" each other. The War Department, in its mobilization regulations relating to dental requirements, specifies that the prospective soldier must possess "a minimum of 3 serviceable masticating teeth above and 3 below opposing, and 3 serviceable natural incisors above and 3 below opposing."

An acute toothache, even at the time of his examination, will not exempt a draftee from military service. A natural tooth, which has a cavity that can be restored by filling, is considered as a serviceable tooth. The prospective soldier, therefore, is instructed to visit a dentist without delay. For acceptance at any army induction center, however, his dental defects must be readily and immediately remediable, so that he can be in condition to start military duties.

The statistical division of the Army Dental Corps has estimated the percentage of rural rejections as compared with urban, using as a basis the data on 120,689 men who had been called for examination up to February 9, 1941. The 9th Corps Area, which includes the northwest, showed 4.68 per cent, the highest rate of dental ailments in men from rural sections. The total figures were 3.31 per cent from cities, as compared with 2.18 per cent from farming sections. Since the number of men drafted from urban sections greatly outnumbered those from rural areas, these figures cannot be considered particularly significant. That rural residents neglect their teeth to a greater extent than city people is a generally acknowledged fact.

During World War I, only about one-half as many men were rejected because of poor teeth as are being refused at present. The dental requirements then, however, were slightly lower. The New England States, in the first World War, showed a definitely higher percentage of tooth ailments than any other part of the country.

Specifically, a draftee is rejected if he has a tooth with excessively deep pyorrhea pockets, or when its root end is infected; if he has a disease of the gum which is severe enough to interfere seriously with work in civil life; if any jaw ailment is present which is not easily



Milwaukee Journal Photo

During the period of mobilization and training the major effort of the Dental Corps is to correct all dental defects and to maintain the oral health of the army. Officers and enlisted men are carefully examined, and the routine procedure in each army clinic provides for elimination of infection sources and restoration or replacement of diseased teeth

remediable and would likely prevent satisfactory performance of general or limited military service; if he has abscesses, the correction of which would require protracted hospitalization and incapacity; or if he possesses extensive tooth cavities which are irremediable.

The army dental requirements further state that teeth which have been restored by crowns or dummies attached to bridgework, under most conditions, will be considered as serviceable natural teeth, when the history and appearance of these teeth are such as clearly to warrant such assumption.

There is a possibility that the United States may soon follow in the footsteps of Canada's Department of Munitions and Supply. This Division, last fall, ordered $44,000 worth of false teeth for Canadian soldiers. One hundred thousand teeth already had been delivered to the Canadian Army Dental Corps. Officials said these large orders were no reflection on Canadians' oral health and equipment, but merely a precaution against shortage "so that a run on bicuspids or molars would not prevent army dentists from making suitable plates."

Brig.-Gen. Leigh C. Fairbank, Chief of the Army Dental Corps, points out that dentistry in military camps and hospitals must be considered from two points of view: The dental work accomplished in time of mobilization and training; and that in the theater of operations in time of war. During the period of mobilization and training, the major effort of the Dental Corps is to correct all dental defects and to maintain the oral health of the army. Officers and enlisted men are carefully examined, and the routine procedures in every clinic provide for the elimination of all sources of infection and the restoration or replacement of diseased teeth. In most cases it is found that military personnel soon appreciate that the efforts of the dental service are for their personal benefit and they quickly establish new habits in the care of their teeth and mouths.

It is so common to find an utter lack of oral hygiene among recruits that oral surgery often cannot be undertaken until thorough prophylaxis has been made and the promise of personal dental hygiene has been secured from the soldier. These effective measures, in addition to the vigorous and healthy daily mode of life of the soldier, practically always bring satisfactory results sooner than could be obtained in civilian life.

The surprising discovery that the young men of this country possess such an unexpected number of dental ailments naturally leads to speculation and a generally uneasy attitude regarding the teeth of the children of today—the men and women of tomorrow. Dental disease is the most prevalent of all physical defects among school children. Between 90 and 95 per cent of all pupils throughout the United States have some type of dental weakness.

Since there is absolutely no known method of preventing tooth debility, there are only two principal ways to fight it: the use of nutritional foods during the formative period to build sounder teeth, and the correction of dental troubles as soon as they manifest themselves.

Startled by figures released by the United States Public Health Service regarding dental conditions in Washington, D. C., the District of Columbia Health Department has entered on a dental health program which already has produced definitely successful results. The figures showed that 58 per cent of the people in Washington can afford dental treatment, but will not avail themselves of it. Twenty-two per cent of the population utilize all dental facilities. The remaining 20 per cent cannot afford dental treatment.

The program by which Washington is endeavoring to remedy this condition involves two distinct phases: Limited clinical service for those unable to pay; and an educational and prophylactic service for all children, with particular emphasis on the younger children. In carrying out the first part of the project, 9 dental clinics, located in public school buildings and operating on a yearly basis, were established. The personnel, each of whom must meet high qualifications, consists of 2 dentists for each clinic, each working three and one-half hours daily. Patients are admitted to clinics on the basis of need and because of the inability of their parents to pay for private service, preference being given to younger children. The second half of the program, that of dental health education, is conducted through the public schools. The theory is that children must be stimulated to care for their teeth at an early age, and encouraged to keep it up.

The first step is mass tooth inspections in every city schoolroom by dental hygienists. Parents of all children found to have defective teeth are advised to take them to a dentist as soon as possible. Next, group lectures in oral hygiene are presented to the children. Lectures to children from kindergarten to third grade age are limited to 12 *(Continued on page 583)*

Does your child have HEART DISEASE?

By GRACE IGO HALL

DOES YOUR CHILD have "growing pains"? That's what they were called not so long ago. Even today there are parents who consider such symptoms normal. It's only part of the youngster's growing-up process, they used to say, yet these so-called "growing pains" may be in reality extremely serious.

Don't make the tragic mistake of ignoring such danger signs, of thinking these "growing pains" are characteristic of adolescent youth. Healthy, vigorous boys and girls do not have them. Staggering are the number of cases on record of children whose parents paid no heed to these warning symptoms—symptoms that usually follow rheumatic fever not only a few weeks, but months or even years later. Rheumatic fever, dread disease that causes a large proportion of heart defects in children between the ages of 6 and 15, kills annually one child out of every hundred.

Leading scientists have been working constantly for many years to determine what causes the rheumatic fever that so frequently leaves children with weak hearts. So far the real cause remains a streptococcic mystery. This, and the fact that a child is seldom born with a defective heart, is sufficient reason to watch carefully the health of your child.

Physicians have found that, of all the persistent diseases, rheumatic fever is one of the worst. Often, to all outward appearances, a child having had rheumatic fever may seem to be completely cured, yet the germ still lurks in his body, keeping the infection active, waiting, ready to strike at the moment his resistance becomes lowered.

Frequently, rheumatic fever in its early stages is difficult to recognize. Swollen, painful joints, fever and sore throat should always be investigated; they all are apt to be symptoms of this disease. Often rheumatic fever leaves its young victim with a weakened heart that may not noticeably bother him until he is past adolescence. There are, also, sometimes faint signs that the heart is having a difficult time within—such signs as a slight pain over the heart, a rapid pulse, or a shortness of breath. These symptoms should be investigated when they warn.

Examinations of many rheumatic fever patients reveal that their hearts have been

left in a serious condition by the disease. Any, or all, of the four delicate sets of valves between the heart chambers may become inflamed. Finally, when these valves do heal, they are often scarred sufficiently to hinder the valve's mechanical process for life. Sometimes, following a rheumatic fever illness, the membrane enclosing the heart is damaged. Too, doctors often find that rheumatic fever patients seem to run in a family. If one child has it the brothers and sisters seem to follow suit. Removing tonsils and adenoids is frequently done to check the progress of this disease. Especially is this true with a child in a large family where the possibilities for contacts with acute disease are maximal. The good which this operation will do is dependent not so much on the damage that has been done but, if the rheumatic fever has any relationship to infected lymphoid tissue, it may help save future repeated assaults.

Once a child has had rheumatic fever, a doctor should be assured of the parents' complete cooperation for the following six or seven years in the care of their child, since sore throats or colds during this period can again start the infection. Often acute sinusitis and middle-ear disease occurs as a danger sign of another beginning attack of rheumatic fever. When this disease attacks a child who has been denied from birth the essentials of good health —sunshine and nourishing food—it is indeed disastrous, for this child physically is far less apt to pull through the illness.

When a child has frequent nose-bleeds for no apparent reason he should immediately be taken to a doctor, for every third child who suffers from rheumatic fever is subject to severe attacks of nose bleed. Common also among children who are rheumatic fever sufferers are the appearance of tough nodules, about the size of a pea, that form on the front of the knees or the back of the head, or sometimes on the back of the elbows. As the disease disappears, so do the nodules.

Suitable reading material will usually provide mental diversion for rheumatic fever patients.

There is no single, infallible test to determine whether rheumatic fever is present or not. When a physician is in doubt he usually gives several tests before he arrives at his final diagnosis. He traces the heart beat by means of an electrocardiographic test and usually makes blood tests. Present progress in the roentgenology also has enabled doctors to make many improved diagnoses. Indeed, the world is especially indebted to Dr. Stanley Gibson for much of the recent outstanding work in heart disease of children. More recently, scientists have been working on a possible operative procedure that may, at a later day, give some relief. This procedure is still in its infancy and much work remains to be done before medical men will advocate surgery as a cure for heart disease. But certainly it is true that each new attack of rheumatic fever leaves a child's heart more seriously damaged. That is why it is wise for every mother always to have her doctor check every symptom in her child that seems like a danger signal.

All heart murmurs do not mean a child has a dangerously weak heart. Sometimes mild murmurs of the heart may be due to temporary anemia or other passing conditions. Always of great importance is a correct appraisal of a child's irregular heartbeats. His future health may depend on this. But rheumatic fever is not the only disease that often leaves a weakened heart condition. Diphtheria at the time of the attack or sometimes in later years may be the cause of a heart ailment in children. Today, that seldom occurs, however, because in most diphtheria cases the use of antitoxin removes the danger to a child's heart. Scarlet fever, likewise, may affect a child's heart in exactly the same way as diphtheria does. When a child has any symptoms of any one of these infectious diseases, put him to bed at once since that is the quickest way to rest the heart. Later, the doctor, when giving the child a thorough physical examination, will be able to tell whether any damage to the heart has occurred.

Parents must always keep in mind that it is difficult for a naturally active child, accus-

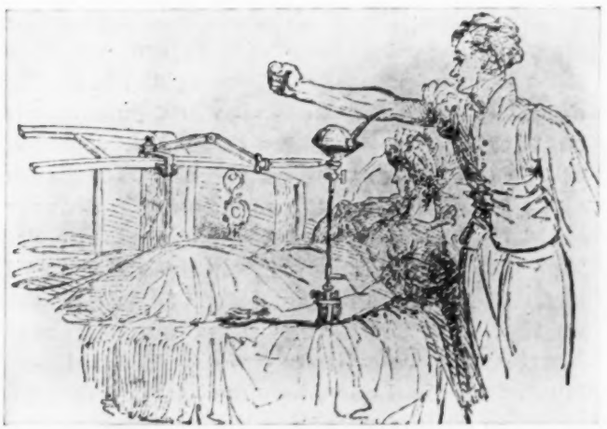
Sedentary occupations, such as stamp collecting or weaving, should be found for children during periods of convalescence from rheumatic fever.

tomed to taking part in the neighborhood baseball and football games, to be barred suddenly from these pleasures because of a weakened heart. At such times his parents must find new, interesting activities while his reserve strength is being restored. With proper treatment of sunlight, outdoor rest, simple food, plus the right amount of exercise, the inflammation of the heart will be lessened. Lessened, too, will be a chance recurrence of the disease. In time the child becomes accustomed to this moderated daily regimen which he may have to follow for a long time.

Don't gamble with your child's life. Children by the thousands are being stricken with rheumatic fever and its crippling results. Since rheumatic fever, which so often brings on rheumatic heart ailments, gives an initial warning by certain definite symptoms, there is no reason to wonder if your child is healthy or not. And since there is infinitely a greater chance for cure by early detection, wise parents should always be on the alert for danger signals. Only by thorough examinations of children by reliable child specialists, or doctors, can heart diseases in children be brought to light, treated and cared for. Statistics show us that many hundreds of young, rheumatic heart sufferers will in time, with continued, correct medical care, be cured so satisfactorily that the child patient is able to live a normal, natural existence in later life. Most certainly the rewards of medical perseverance in such cases are worth the effort of any parent.

Upper sketch shows use of goose quill and pig bladder for intravenous injections about 1656. Lower sketch shows first use of piston plunger.

Lower's tubes were used for transfusions from lambs to human recipients. Blood was commonly let from the other arm to avoid an oversupply.



Blundell's "Gravitator" found widespread favor and was the instrument most frequently used in the 45 successful transfusions reported in 1859.

This is one of the last illustrations showing the transfusion of blood from animal to human recipient. Lower's tubes are still being used.

Development

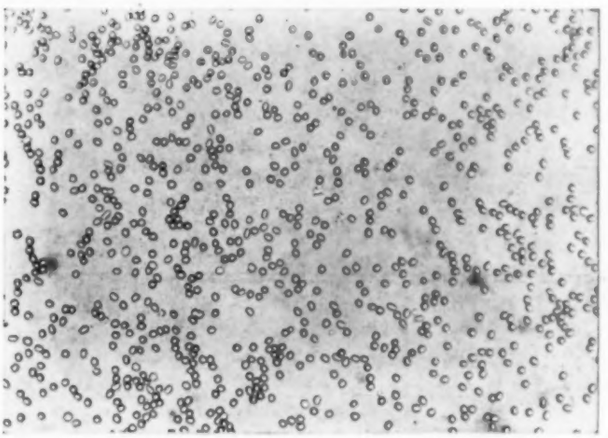
"ON THE 26TH OF JUNE, 1837, I was called to attend the wife of John Cook, a weaver, living at Eden Place, about a mile from my house. She had been attended by a midwife, and had given birth to a child at its full time in the course of the previous night. The patient was about 42 years of age, and this was her seventh child. I found her at 6 a. m. in an exceedingly exhausted condition. Blanched by a profuse haemorrhage, which no adequate means had been employed to suppress, but which had now ceased, she was lying on her back in a state of imperfect consciousness, with the pulse at the wrist barely perceptible, now and then moaning lowly and casting about her arms. After repeated doses of rum, beef-tea, brandy and other restoratives, deceitful promises of reaction were succeeded by progressive indications of sinking, until at length about 1 p. m. she became quite unable to swallow. The pulse at the wrist and in the throat had not been perceptible for more than two hours and a half, and the coma was now complete. Under these unpropitious circumstances I determined upon transfusion, with little hope of success,

# of Blood Banks

By CARL W. WALTER

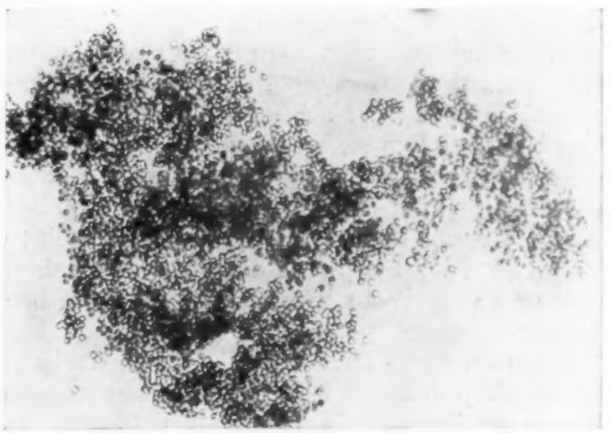
and with no small compunction for having thus afforded the operation so little fair play. At half-past one p. m. I was provided with the apparatus necessary for performing it; and having obtained a willing supply of blood from three of the patient's kind-hearted neighbours, I opened a vein at the bend of the elbow and . . . proceeded cautiously and steadily to introduce it. . . . I found that the cup attached to the apparatus was so small that it could not be safely used (to prevent the entrance of air), but finding that, by taking a common basin to receive blood, and by drawing it up thence through the bottom of the syringe, I could obviate this danger, I laid the cup aside altogether. With this simpler arrangement I passed syringeful after syringeful into her exhausted veins, pausing from time to time to mark the effects, and anxiously watching for some glimmering promise of the return of energy to her heart. On a moderate computation we had already transfused twelve ounces of blood . . . we had yet obtained no assurance of improvement, but it was pretty evident that, by proceeding cautiously, we neither had done, nor could do any harm.

In 1890 blood was found to clot more slowly if kept in paraffin-lined tanks. By 1911 this new technic was widely used for direct transfusions.

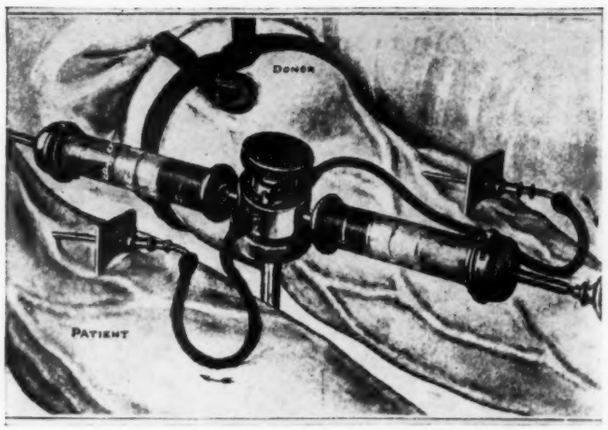


A photomicrograph of human red cells suspended in human serum of a similar group. These cells remain suspended as distinct, separated units.

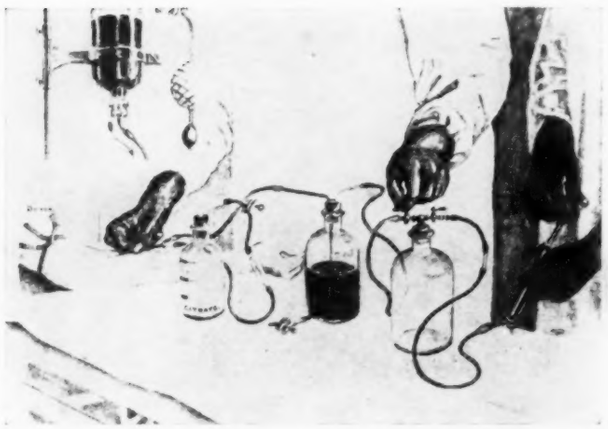
The Higginson syringe was also developed for the transfusion of blood. Its principle still is used as an enema syringe and stomach pump.



When incompatible blood types are united, the cells clump together or agglutinate. Such cell masses produce a severe physiologic reaction.



In a modern version of Blundell's "Impellor," two syringes provide for a continuous flow of blood from donor to patient to avoid clotting.



The addition of sodium citrate to stop blood coagulation, first begun during World War 1, has practically displaced all other technics.

Without this expedient the poor woman's death was inevitable, and but too probable, we then thought, even with it; so disregarding the cautions given upon this point, we determined to go on. . . . After persevering for a few minutes longer, we had the very perfect gratification of witnessing not only the complete restoration of the circulating power, but the return of consciousness, and of the ability to speak. . . . She went on very favourably, and in a few weeks was moving about in her family as usual."

A century ago Dr. Richard Oliver, Carlisle, England, published this striking case report. There are few descriptions of surgical shock in medical literature that equal it. The clinical observations, choice of treatment, and result are unsurpassed in modern hospital practice. During the intervening hundred years, however, scientific advance has elaborated the fundamental concept of transfusion so that the only elements in common between Dr. Oliver's life-saving procedure and that of today are the patient, the physician and the donor. A difficult, hazardous operation has become safe and easy; its benefits should also become universally available at a moment's notice.

Modern transfusion is the apex of a pyramid of knowledge which has been built by joint enterprise during four centuries. Scientists of diverse knowledge and skill have added facts which had to be correlated at the bedside by courageous doctors. Animal experimentation has been responsible for a major portion of the advance. Desperately sick patients furnished the stimulus which drove doctors to attempt transfusion to save life, often despite censure of contemporary colleagues and a prejudiced public. Unfortunate accidents and deaths have been a great positive force in broadening the base of the pyramid by inspiring the relentless search for knowledge which would eliminate the hazards of transfusion. Throughout the developmental period, momentary success often fired popular imagination and prompted such promiscuous use of the operation that it periodically fell into disrepute. Abuses were quickly recognized by the public and resulted in prejudices against transfusion which still prevent widespread benefit from the operation.

The transfusion of blood was a natural outgrowth of early attempts to inject medicine into veins. In 1656 Sir Christopher Wren, astronomer, mathematician and architect, injected dogs intravenously through a quill securely fastened in the neck of a small bladder. The first authentic description of a successful blood transfusion is that of Richard Lower, performed in 1665. After a series of experiments suggested by Wren, Lower transfused blood from the carotid artery of one dog into the jugular vein of another through a series of connected quills. He later devised a silver tube to facilitate this transfer and described the immediate relief of acute anemia in a dog suffering from loss of blood following removal of the spleen.

In 1658 the physician to Louis XIV, who had perfected his technic by animal experimentation, succeeded in transfusing more than a pint of lamb's blood into a youth who had been exhausted by repeated bleedings, then prescribed as a cure for an obscure fever. The

striking recovery of the boy encouraged Denis to repeat the operation on others. He described an untoward reaction in another patient, following a transfusion given as a cure for lunacy: "His arm became hot, the pulse rose, sweat burst out over his forhead, he complained of pain in the kidneys and was sick at the stomach. The next day his urine was very dark, in fact black." Undeterred, Denis gave the patient another transfusion. The patient suddenly died. Jealousy and resentment led to Denis's arrest and trial for murder, but he was later acquitted.

Scandals caused by numerous deaths following transfusion as well as severe, often fatal, reactions in the allied field of intravenous infusion of drugs discredited the method, and during much of the eighteenth century it was forgotten. Throughout this early period the emphasis was on the actual performance of the operation. Transfusions were given for reasons dictated by popular fancy. Thus, it was advocated as a last minute stay of death, a means of restoring youth to the senile, or sanity to the insane. Proposals were made to change character or to settle marital discord by reciprocal transfusions. The burning question was whether "dogs transfused with sheep's blood would grow wool, hoof and horn."

Interest in physiology became intense early in the nineteenth century, and the description by a French physiologist in 1811 of the effects of injecting air into the veins and arteries of the neck revived the study of intravenous injections. Reports appeared describing the action of various drugs injected in the hope of discovering a control for a specific disease. James Blundell, a lecturer in physiology and midwifery at Saint Thomas's and Guy's Hospitals, London, heard of the transfusion of blood performed by Leacock. The operation appealed to Blundell as a logical means of replenishing the blood lost by puerperal hemorrhage, a fatal complication of childbirth which the attending doctor was utterly helpless to control. He reproduced the clinical picture in animals by bleeding them until but few signs of life remained, and then demonstrated that death could be prevented by transfusing blood from animals of the same species. Temporary resuscitation followed infusion of blood from unlike animals, but death was delayed only several days. Hence, human blood alone seemed suitable for his purpose. He solved the technical problem of transferring human blood by devising an apparatus into which the donor could be bled and whence the blood could be forced into the recipient's veins. He determined experimentally that venous blood was as effective as arterial, and that it lost none of its life-restoring properties by passing through his "Impellor."

Blundell was also convinced by experiments that it was unnecessary to restore as much blood as had been lost, and he applied these basic facts to the care of his patients in 1818. Although he failed to prevent death in the first four moribund patients whom he transfused, he persevered and revived several women when death from puerperal hemorrhage seemed inevitable. He thus established transfusion as a life-saving procedure and devised a technic which still persists in modified form. Dr. Oliver's report is evidence that the public quickly benefited from Blundell's contribution.

As transfusions were done more frequently, it became obvious that there were certain risks attached to the procedure. Phlebitis, inflammation of the donor or recipient's veins, caused difficulty. Untoward reactions, such as Denis described 150 years earlier, were often severe and sometimes fatal. Even skillful operators had difficulty with blood clotting. Nevertheless, by 1859, 57 cases of transfusion for hemorrhage following childbirth had been reported with 45 recoveries.

As early as 1821 attempts were made to avoid the clotting of blood by removing the fibrin, the protein responsible for coagulation, or by rendering it inactive by adding caustic soda. This fibrin was shown to be powerless to restore life after hemorrhage and to be toxic when injected into animals of other than the original species. Defibrinated blood was proven an effective restorative after exhaustive bleeding, and ingenious instruments were devised to defibrinate blood, but the method has not persisted.

Curiosity as to the fate of transfused blood corpuscles led to an understanding of the untoward reactions which sometimes followed transfusions. It was noted in 1869 that human red corpuscles clumped together or agglutinated when placed in the fluid expressed from the clotted blood of cats, dogs, sheep, or birds. Later this observation was extended by the demonstration that the serum of one species agglutinated and dissolved the corpuscles of another species. Thus, hemoglobin, the chief content of red corpuscles, was liberated following heter- *(Continued on page 576)*

The MARCH

Fred W. Rankin, M.D., Lexington, Ky., internationally famed surgeon, is president elect of the American Medical Association, the highest honor in the province of scientific medicine.

Dr. James Ewing, New York, receiving the Distinguished service Award of the American Medical Association's House of Delegates from the Association's president, Dr. Frank H. Lahey.

Wide World

# of MEDICINE

To the American Medical Association's ninety-second annual convention at Cleveland came many of America's outstanding physicians and men of science to present to fellow doctors 171 exhibits on recent developments in the field of medicine and to conduct affairs of the Association.

Last week *The Journal of the American Medical Association* said editorially:

"Conspicuous in the Cleveland session were the exhibits. The unanimous encomiums by physicians who spent many hours in attendance of both the scientific and technical exhibits are proof of the tremendous value attached to these features. Invariably the doctors said that the scientific exhibits offered the greatest concentrated postgraduate education in medicine made available anywhere in this or any other country. The scope of the exhibits, the perfection of organization, the attractiveness of the displays and the earnestness of the physicians who demonstrated were, no doubt, largely responsible for the enthusiasm. Since the time when Drs. Frank Wynn and Frank Billings first gave their personal attention to this development there has been steady progress toward the practical perfection now achieved."

Shown in the photograph at the top is Dr. Samuel B. Harper, Mayo Clinic, as he points to features of his method of drying blood plasma in Cellophane.

Below is Dr. Russell L. Haden, Cleveland Clinic, with the earliest (1655) and the latest microscopes.

At the bottom Pansy Stockton (Indian name: Wanashta Wastaywin) demonstrates how the Indians made medicine before the coming of the white men.

M. S. White, M.D., of the School of Aviation Medicine, Randolph Field, Texas (standing), demonstrates the effect of anoxia in altitude flights.

Robert L. Dickinson, M.D., New York, with his childbirth exhibit at the Cleveland convention, demonstrating the development of the human embryo.

Varicose Ulcers

Many people suffer discomfort—sometimes for years—because they fail to consult a doctor at the initial signs of varicose ulcers. But only prompt attention with accepted measures will assure a cure for this chronic disease

By BERNARD BEHREND

VARICOSE ULCERS are among the most prominent chronic diseases that affect the lower extremities. Many industrial or business concerns requiring physical examinations will reject a prospective employee if he has a varicose ulcer that is not receiving active medical treatment. Too often patients believe they cannot take time off from their employment but when treatment is begun at the first sign of varicose veins physical appearance, even in advanced cases, is remarkably improved and disability and economic loss are reduced to a minimum. Patients are not always aware that in the ordinary medical care of varicose veins and ulcers hospitalization is unusual.

Many people suffer discomfort—sometimes for years—because they fail to consult their physicians about their leg ulcers. Some patients stop treatment because a cure is not quickly attained. Others seek quack remedies with painful, discouraging sequelae. Only prompt attention with accepted methods of treatment assures a cure for varicose ulcers.

The causes of leg ulcer are well defined and not all are caused by varicose veins. Other diseases such as diabetes, syphilis, blood dyscrasia, impaired vascular function, chronic eczematous or fungous disease of the skin may also cause leg ulcers. And malignancy as well as tuberculosis may occur in a leg ulcer.

A patient with varicose veins has faulty venous circulation in the legs. When this condition continues untreated, chronic swelling may develop in the lower extremities, circulation is further impaired and the skin suffers from lack of nutrition. The slightest injury to the skin causes a break in the tissue which will be the initial point for ulcer formation. Serous discharge from the swollen skin oozes slowly from the injured spot; bacteria commence to grow and infection begins in this fertile field of devitalized tissue. In a short period of time this ulcer, if neglected, can spread enormously, necessitating protracted treatment.

However, the leg does not have to be swollen to cause an ulcer. Injury to a portion of the skin supplied directly by a varicose vein will also fail to heal properly due to the pooling of the blood in the vein. This prevents normal removal of the waste products in that area, causing the wound to remain open. The red blood cells escape from the capillaries and the iron pigment in the red corpuscles disintegrates in the skin producing the common, brownish-red discoloration prevalent in leg ulcers. Once this occurs, the natural function, color and contour of the skin is lost. But if treatment is promptly begun, further disfigurement can be prevented and even complete restoration of the skin may result.

Also, varicose veins so weakened by long continued swelling and back pressure may break open and hemorrhage. The bleeding is easily controlled by a pressure bandage but the opening in the vein may be the focal point of an ulcer.

Varicose ulcers appear frequently in both sexes. The ulcer, ordinarily tender and sensitive, can be on one leg or both. Usually it is on the lower inside part of the leg. This region is prone to ulcer formation because it is easily injured and the blood supply is not as abundant as in the more fleshy parts of the leg. Multiple ulcers on an area of the leg are not as common as single ulcerations.

Phlebitis or inflammation of a vein is not an infrequent complication of varicose ulcers. It may be localized, involving a small portion of the vein, or it may *(Continued on page 573)*

Emotional

By CARL BINGER

Loss of appetite and loss of weight often may be the beginning of a state of depression, just as greater food intake and gain of weight may bring about a period of elation or general excitement.

Disturbances of Appetite

YOU DON'T NEED an expert to tell you that your desire for food is closely related to your emotions. A young girl in love, a man seriously oppressed by anxiety over his job, a mother worried about a sick child, a grief-stricken widow—all may lose their normal interest in eating.

Less commonly recognized, however, is the fact that an excessive need for food, a desire to eat all the time, may also be emotionally determined. A child who feels unhappy or unloved not infrequently reacts to this state by a kind of gluttony. In addition to stuffing at meals, he will often fill up on sodas and candy between meals. He becomes fat and unlovely. His parents "pick on him" and urge him to restrain his appetitee. He feels more unhappy and more unloved and goes right on overeating; thereby defeating his own purpose. Physicians are familiar with this situation and in the presence of obesity or emaciation they suspect disturbances of emotional equilibrium as well as the presence of bodily disease.

Even events that appear to be minor flurries in the day's routine may in some children and adults produce a sudden loss of appetite. The anticipation of a party, a date with a pretty girl, an important business interview, the first day of school—all may take away our appetites.

But mothers and nurses know that few children grow up without at some time presenting a feeding problem. A child who never presents a feeding difficulty is the exception, not the rule. The difficulty may occur in earliest infancy, while still at the mother's breast, during the weaning process, or any time thereafter, even through adolescence. It may take any form, from excessive greed and gluttony to dawdling over meals, or even to complete refusal, rejection and persistent vomiting. Children, not political prisoners, invented the "hunger strike."

Many mothers and nurses devote hours to coaxing and cajoling the recalcitrant child to eat. The child soon discovers how important this is to the adult and often uses it to gain attention and to monopolize the adult's time and devotion. Why babies vary so in the nursing and weaning process is not wholly understood, but there can be little doubt that these disturbances of behavior are intimately associated with the child's own sense of security and with his need for being loved. To the baby and the young child being loved is not a luxury. It is essential to his emotional survival in a hostile world. His relationship to those who love him and care for him is often expressed in his attitude toward food.

The more any disturbance is emphasized and combated directly, the greater is the tendency to "conditioning" or habit formation. Later in life, especially during periods of emotional tension, or during such times of life as adolescence and late middle age, these patterns established in early childhood may recur. Throughout nature there appears to be a tendency to repeat the experiences of the race and to revert or regress to earlier behavior patterns, especially when emotions are disturbed.

Adults often forget how extremely sensitive children are to minor tragedies and to the passing moods of their elders. The death of a pet canary, a chance shadow of a bear or an elephant on the bedroom wall, an unearned frown or scolding, the bullying of an older brother—all may upset a child's sense of security sufficiently to be reflected in his eating habits. Although each of these minor tragedies must not be taken seriously and bad eating habits should be corrected sometimes with discipline, it is the intelligent approach always to suspect an emotional upset in a child who suddenly presents these disturbances. Naturally, the child's physical health and bodily hygiene should be taken into consideration.

A little girl of 4, pretty, lively, full of vitality and mischief suddenly began to dawdle over

her food. She dug holes in her cereal, filled them with milk, floated crumbs of toast on the milk and called the crumbs her little boats. She began to take an hour or more to eat breakfast. At lunch, her food was smeared on her bib; she always pushed her plate away and said her food was nasty. The girl's nurse tried coaxing, then she tried forcing. But on the mother's advice the nurse assumed an impersonal, nonchalant attitude: "Just take her food away after a certain length of time if she won't eat it. Try not to show that you care whether she eats it or not." The girl began to look peaked and hollow-eyed. She was examined by the family doctor who found her a few pounds underweight but otherwise perfectly normal. He advised keeping her in bed for breakfast and supper and giving her frequent small feedings with some cream added to the milk.

On the nurse's day out she was willful and disobedient. She resisted her bath. She kicked and screamed and was constantly at loggerheads with her mother. When the nurse came home, her first eager question was: "Well, how did things go?" Then mother and nurse would go into a serious huddle, well out of the child's hearing.

The mother noticed that in the nurse's presence her little daughter was exceptionally good —almost too good and obedient. When the nurse called her for her bath she would answer politely and come at once. Often she would steal surreptitious glances at the nurse, almost as if she were afraid of her. The mother and nurse explored this possibility but the child's open demonstrations of affection for the nurse seemed to rule it out.

One evening the family cook explained that on several occasions she had seen the nurse severely spanking the child. The nurse was released from her duties and the child's unruly behavior stopped immediately. In two or three days she was eating with no more fuss or delay than is to be expected of any lively little girl.

Such incidents take place every day. There is not always a villain in the plot; sometimes there may be nothing more malign than a new born baby, or a younger brother or sister who arouses feelings of jealousy and insecurity. Then the mother will say: "I can't understand it. Johnny was told months ago that he was going to have a little baby sister, and he's so darling with her." But Johnny knows better and he has staged a hunger strike.

What is true of children is generally true of adults. They exhibit a wide variety of behavior in their attitude toward food. In persons who are seriously disturbed in their emotional and mental lives, far more highly charged reactions are often encountered. It is common in mental hospitals to find patients suffering from states of depression who refuse food altogether and who have to be fed by tube. Indeed, loss of appetite and loss of weight may often be the precursor of a state of depression, just as increased food intake and gain of weight may usher in a period of elation or excitement. Patients who refuse food sometimes present a puzzling problem. Behind their refusal to eat the physician may discover a variety of emotional attitudes. They may be defiant, like a small child. They may be withdrawn and exhibit an aversion to all external stimuli. They may have disgust reactions and regard all food as dirty, or they may fear being poisoned by food. They may feel that it is sinful to eat, or even criminal. They may be overcome with a sense of guilt at the thought of food. Behind their refusal may be a wish to die, or there may even be cannibalistic fantasies.

Young women patients sometimes fear that certain foods will make them pregnant. This fantasy is not unfamiliar in mythology and is probably analogous to the old wives' tale told to children that a tree will grow in their stomachs if they swallow a prune pit. The Pueblo Indians of Southwestern America believed that their culture hero was born of a virgin who became pregnant from eating two pine nuts. It is an extremely common misconception of childhood to believe that babies are produced through the gastrointestinal tract.

In primitive societies and in many religious rituals,

(Continued on page 574)

Seventy Years Young

They said she grew old gracefully
Because she was always wealthy,
But mother knew at seventy
'Twas because her mind was healthy!
They thought her lovely soft gray hair
A permanent—they should try it.
But mother chuckled, brushed with care
And secretly watched her diet.
They called her young in heart and mind
And her sons all loved to joke her
And on occasions you would find
Dear old mother playing poker.
She may have had to compromise.
What price convictions . . . she knew her
Old heart must see through younger eyes
If she held them closely to her.

—Vera Blood Fletcher

Pathways of Medical Discovery

By REGINALD FITZ

ALFRED NOBEL, a Swedish inventor who died in 1896 at the age of 63, provided in his will for the distribution of five substantial prizes each year to be awarded to persons who in different fields of activity had made the greatest contributions toward the progress of the world and the welfare of humanity. The prizes were to be divided equally among recipients for distinguished work in physics, chemistry, medicine, literature and the promotion of world peace. In order to obtain an award in medicine, a recipient must indeed have accomplished work generally accepted as being of priceless value.

In attempting to outline the pathway of medical discovery in recent years it is picturesque to regard the work of the Nobel prize winners in medicine as marking milestones along the road. Some of these milestones, as they have been put in place, are particularly interesting as a bird's-eye view of medicine, showing the variety of ways in which medical research is employed for the benefit of society.

Robert Koch of the University of Berlin was awarded a Nobel prize in 1905 for his discovery of the germ of tuberculosis. He opened the field of modern bacteriology and thereby made it possible to establish the direct cause of a variety of plaguing infections which, until their actual cause was known, appeared almost impregnable. One of the most dramatic downfalls of any common disease, through discovery of its cause, is the fate of typhoid fever. Before Koch's time typhoid fever in the summer and fall killed six or seven out of every hundred persons who acquired it. Once the cause of typhoid was determined through the science of bacteriology so that its life history could be learned from beginning to end and its method of transmission could be ascertained, means for regulating the disease were soon developed. In 1890, hundreds of citizens in Massachusetts were killed by it. Last year there were only a few fatalities. Surely, the ability to determine the cause of a disease and, knowing this, to eradicate it, marks an impressive milestone on the pathway of medical discovery.

Professor Allvar Gullstrand of the University of Upsala in Sweden was awarded a Nobel prize in 1911 for his researches on assisting eyesight by overcoming refractive errors. Conservation of vision is a most important asset to any country. A few years ago the number of young people who were compelled to wear glasses seemed to increase. It appeared as though an increasing proportion of school children were wearing strong eye glasses in order to see, an impression recently borne out by the experience of Selective Service Advisory Boards. The commonest minor cause of physical debility sufficient to exclude young men from the privilege of serving their country as

soldiers has been faulty eyesight. The manner in which doctors, engineers and architects are working to meet this problem is an excellent example of combined endeavor by which dark milestones on the pathway of medical discovery are being illuminated.

Not so long ago schoolrooms were ill-lit, gloomy, with no conscious attempt to insure protection against the dangers of chronic eyestrain. Now, engineers and architects interested in light and doctors interested in diseases of the eye are working together to improve the illumination of classrooms, libraries, workshops and homes. Perhaps in a few years the need for young people to wear eyeglasses so commonly will diminish and it will be easier than now to find a large group of healthy young men with good eyesight in addition to other satisfactory physical attributes. Gullstrand's contribution is surely an important milestone.

In 1920, Professor August Krogh of the University of Copenhagen in Denmark received a Nobel prize for his work on circulation of the blood. Dr. Krogh, besides being gifted with rare talents for investigation, also had extraordinary charm of personality. By a combination of these attributes he attracted to his laboratory a stream of young American and British doctors. From America in the early days of the century came such men as Dr. Francis Peabody and Dr. Cecil Drinker of Boston and Dr. Walter Boothby of the Mayo Clinic. They were interested in the manner in which the blood circulates and how tissue cells received the supply of oxygen necessary to keep them alive. When oxygen was studied it became apparent that gases like oxygen and helium had many possible uses in human physiology, hitherto unthought of.

The realization of Stratoliners, capable of transporting passengers at an altitude of 20,000 feet, was made possible only by the work of ingenious aeronautic engineers who had devised methods by which the interior of an aeroplane could be properly oxygenated at these higher altitudes.

The fundamental knowledge of gaseous metabolism on which the Stratoliner depends is based on physiologic principles established by doctors working in laboratories. Obviously, aviation at high altitudes is in part, at least, a medical contribution—an example of the distant fields into which medical discovery may lead. The Stratoliner, too, marks a milestone on the pathway of medical discovery.

From America came such doctors as Francis Peabody and Cecil Drinker of Boston, and Walter Boothby of the Mayo Clinic to study the circulation of blood and the manner in which tissue cells obtain oxygen.

In 1923 the Nobel prize in medicine was awarded to Drs. MacLeod, Banting and Best for the discovery of insulin and its use in the treatment of diabetes. Dr. MacLeod was professor of physiology in the University of Toronto; Dr. Banting, a gallant soldier who recently lost his life in the service of his country, was a young orthopedic surgeon; and Dr. Best, now professor of physiology in the University of Toronto, was a medical student. Diabetes was an old disease, well defined for centuries as a chronic illness of assured fatality. It was known that the pancreas was at fault in causing the malady and countless investigators had attempted to prepare an extract of the pancreas which might be helpful in treatment. But it fell to the lot of these three investigators to discover a means of successfully preparing a powerful pancreatic extract. They worked night and day in their laboratories and finally evolved insulin, familiar now to every one. The discovery of insulin is a perfect example of human patience and ingenuity! It shows how medical knowledge may advance slowly, without apparent progress, until suddenly a new idea, or a new method of approach, may do away with all past errors and almost overnight may compensate for centuries of struggle. The discovery of insulin also is a milestone which offers hope that a cure is possible for any chronic illness which, for want of knowledge at any one period of time, may appear to be hopeless.

In 1925 Prof. William Einthoven of Leyden was given the Nobel prize for his work on heart disease. He knew that whenever a muscle contracts an electrical impulse is developed. Reasoning that the heart was a muscle, which under normal circumstances contracts 70 or 80 times a minute for many years, he devised a method for recording on a photographic film the electrical impulse generated by the contracting heart muscle. He recorded the impulse by means of a galvanometer and photographed the resulting gyrations induced. This was an important discovery, for hitherto the regularity or irregularity of the heart action could be recorded only by haphazard methods. Now a precise study of the rhythm of the heart's action was possible, as well as the type of electrical wave produced by various forms of disease. This new knowledge led to important advances in treatment.

By listening to the heart with a stethoscope, two sounds are normally heard: "lub-dub, lub-dub." In certain conditions of heart disease the character of these sounds changes and there may develop swishing sounds which doctors speak of as murmurs. It is a simple matter to hear a murmur but it is much more difficult to tell whether the swish comes just after or just before the "lub" or the "dub" of the normal sound. The correct placing of the murmur may make a good deal of difference in accurate diagnosis. After Einthoven's discovery was acclaimed and the electrocardiograph became a stable part of medical equipment, and as the science of radiophysics was developed, doctors interested in physics and physicists interested in cardiac physiology developed methods for making graphic records of the heart sounds. Now it is possible to establish exactly when in relation to the "lub" or the "dub" of the heart cycle any other sound develops. Not only is the ability to do this of academic interest in the study of heart disease, but also it is of distinct practical value.

For example, a method has been perfected recently by Dr. Robert E. Gross of Boston for operating on the cause of a certain heart murmur and in judging the results of this operation it is important to have something more certain than the human ear. As can be seen from the record, in this particular instance, the murmur so easily visible before operation was made to disappear—a happening considered impossible a few years ago.

One hundred and eighty years ago when Dr. Peter La Terrière, the first man to receive a medical diploma at Harvard, was a student in Paris he attended an interesting clinic. One of the Parisian doctors who specialized in the treatment of diseases of blood obtained permission to revive an old method: transfusion. He was allowed to operate on a condemned criminal, to remove some blood from his veins and in its place to inject an equal volume of blood drawn from a calf. That was by no means a new idea. Usually, such experiments were unsuccessful but occasionally they achieved sufficiently good results to keep alive in the minds of doctors the idea of some day being able to use animal blood for human needs. Before this aim could begin to approach fulfilment, it became apparent that more must be learned about blood transfusions.

In the early days of this chapter of medical history, attempts at human transfusion often were followed by unpleasant results. In 1930, however, the Nobel prize in medicine was awarded to Dr. Karl *(Continued on page 590)*

Bill Kaiser lost both legs in a railroad accident, but here he is at bat. Later, he also pitched for his team.

WE ARE NOT

MANY of the 500,000 wearers of artificial limbs in the United States are employed in the manufacture and sale of 21,000 new arms and legs each year for users replacing their old limbs and for victims of accident or disease who are about to make their first use of prosthesis—a full-dress word meaning the addition of an artificial part.

It doesn't just happen that way. One of the largest limb manufacturers in the country will employ only users; the Association of Limb Manufacturers of America operates an employment bureau to which customers seeking new jobs are commonly referred; the ALMAnac, monthly bulletin published by the Association, runs articles like this: "Relatives of G. L. (Peg) Emmerling, formerly of Hugo, Colo., are anxious to learn his whereabouts due to an illness in the family. They feel that some artificial limb manufacturer may have news of

him." It is natural, too, that users make the best salesmen. A non-user would have difficulty getting his story across to an old timer whom he was trying to change over from one brand or type to another, and the new prospect is hungry for the demonstration of function which only an experienced wearer can give him.

Not to be outdone, wearers of artificial limbs have their own organization, the Fraternity of the Wooden Leg, with its own magazine, *Courage*. The FWL was founded in 1940, specifically to promote state and federal legislation seeking to create funds for the purchase of artificial limbs for indigent patients, and generally to provide assistance, counsel and encouragement for amputated cases. Active FWL membership is restricted to those who have lost feet or legs, hands or arms by amputation; honorary membership may be extended to any who have given financial, legal or medical service to the organization. The FWL sent a representative to the last national convention of the ALMA, a visit which resulted in the exchange of mutual good wishes.

Wearers and manufacturers alike agree that an artificial leg is a lesser handicap than an artificial arm, depending somewhat on the nature of the amputation and the occupation of the amputee. Since the functions of the leg are generally restricted to weight bearing and locomotion, the limb maker can come a lot closer to duplicating nature with a properly designed and operated leg than he can in simulating the arm, hand and fingers, whose intricate movements the most ingenious devices are at best only a clumsy approximation. The artificial leg, moreover, is a whole lot less conspicuous, particularly if the amputation is below the knee. In such cases a limb now may be produced to enable the wearer to walk with a scarcely noticeable limp. Physicians regard the psychologic factor as of almost equal importance to the physiologic in the rehabilitation of many patients, and for this reason the shape and appearance of limbs are given careful attention by the manufacturer. Patients whose condition is such that an old fashioned peg or hook would be preferable surgically frequently insist on limbs which approach the appearance of the natural member, even though these may be heavier and more difficult to operate. Trade literature features snapshots of male users, their trouser legs rolled up to expose the knee mechanism, engaging in boxing matches, foot races and other forms of vigorous exercise. Female users are likely to be shown skipping rope or dancing.

Limb manufacture got its first great impetus in modern times shortly after the World War, when the British Ministry of Pensions found itself with 41,000 amputees whom it was obliged to furnish with artificial limbs for the rest of their lives. The Ministry got busy and established artificial limb centers at several of the big military hospitals, where they were still issuing limbs at the rate of some 4,000 a year as recently as 1939. Of the original group, 11,600 required arms and 29,400 needed legs, 17,000 of the latter being for amputations above the knee. Experiments by the Ministry during the first years after the war were a factor in the development of metal limbs, which have gained wide popularity today. Proponents of modern aluminum alloys say that the metal limb is more comfortable, an advantage which users and wearers of wooden legs claim with equal fervor for their own favorite. Outside the fact that metal limbs are generally lighter in weight, it's pretty much a matter of opinion. At any rate, there's still an active market for both products.

Most laymen believe that the longer the stump the more adaptable it should be to the use of an artificial limb. For a long time, a similar feeling on the part of surgeons and an understandable desire to preserve as much as possible of the natural arm or leg created difficult problems for the limb makers, who recognize an ideal stump as one which is long enough to provide ample leverage for the artificial limb and short enough to avoid the mechanical difficulties which develop when the end of the stump extends too close to the next joint. Thousands of case histories, moreover, have demonstrated that circulatory troubles with accompanying discomfort and symptoms,

CRIPPLES!

By R. M. CUNNINGHAM JR.

which sometimes necessitate reamputation, occur more frequently when the end of the stump is far removed from the joint next above the amputation. In the case of leg amputations below the knee, where the tendency to preserve stump length was especially persistent, a short stump is frequently desirable because it permits the use of an artificial leg which bears most of the weight on the natural hip joint rather than on the amputated end of the shinbone. Closer cooperation between surgeon and limb maker is now possible through the formation of a group of consultants representing the ALMA and the Council on Physical Therapy of the American Medical Association. The group has recently published a series of articles to be included in a comprehensive "Handbook on Amputations," recommending that the surgeon consult with a limb maker whenever possible before amputation, and, among other things, pointing out the harm that is done the patient by excessive sympathy and undue delay between the amputation and the introduction of prosthesis.

Limb making today is a nice combination of mass production economy and the efficiency of individual craftsmen. The modern metal limb consists chiefly of two parts: the socket, which must be molded by the craftsman to fit the individual stump, with proper allowance for later adjustments required by stump shrinkage; and the limb itself, known to the trade as a setup, which includes a collar into which the socket is riveted and the necessary devices for operation and control. Setups are produced in quantity from dies in several standard sizes and lengths which require only minor alteration to suit the individual case. A few big setup manufacturers supply scores of small limb shops which employ from one to as many as twenty craftsmen. These shops usually have their own salespeople calling on hospitals and physicians and watching the newspapers for accident stories.

To produce a socket, the limb maker first obtains a plaster of paris duplicate of the patient's stump. Then he cuts a sheet of aluminum to approximate size and shapes it carefully around the stump cast, using hand operated rollers which permit adjustment to the slightest surface irregularities. The resulting socket is hand welded to avoid any ridge or seam along the line of union, and is finally equipped with a soft metal beading at the top to prevent chafing. In a large shop, a limb to fit the patient may be carried in stock, in which case the whole process takes only a day or two. In most instances, however, the limb maker will send the finished socket to the manufacturer, with the patient's measurements, for assembly with the appropriate type of setup.

A patient with an ideal length stump resulting from amputation below the knee is the easiest to furnish with a satisfactory limb. Having chosen either a mechanical or rubber toe setup, the limb maker adjusts the tension in the spring mechanism which operates the ankle, fits the braces which run upward from the leg at the sides and attach to a corset laced on the thigh, and like as not watches his customer walk out of the shop under his own steam.

Use of the leg below the knee is easy compared to the trials which must be endured by the patient who is learning to walk all over again with a limb controlled entirely from the hip by a pelvic belt, or, if the stump above the knee is short or excision has occurred at the hip joint, from the shoulder. In either case, proper control of knee action is the big problem. The manufacturers have developed a variety of helpful devices: a braking action operated by shoulder straps is used most commonly to prevent the lower leg from extending too rapidly, and to avoid sudden and unexpected flexion, or knee-shooting, with resultant loss of balance. With this as with other devices, though, months of practice are necessary before the patient can manage a safe and satisfactory gait. A tedious job also faces the arm amputee who must master a difficult biceps or shoulder action to flex and extend his mechanically operated wrist, fingers and thumb.

About the only problem to which surgeons and limb manufacturers haven't found the answer is the "phantom limb," in which the patient sometimes reports severe pain. Frequently associated with changes in weather or circulatory difficulty, the phantom symptoms sometimes persist after years of surgical treatment and prosthetic experiments. In most cases, however, they disappear when the patient completes his emotional adjustment to his new condition. There is nothing in the record of medical and mechanical science to surpass the fact that thousands of patients readily achieve the splendid psychologic balance of a well-known limb manufacturer, himself a user for more than forty years, who says, "We are not cripples who can walk on two legs!"

Science has Learned to Prevent Painful Sunburn

*SUTRA, the selective sun-filter cream was developed by two American physicians who are believers in preventive medicine. Spectroscopic tests have proven that the ingredient employed exclusively as a filter in Sutra shields against burning rays but permits the passage of tanning rays in amounts tolerable to your skin.

Prepared as carefully as the finest pharmaceutical, Sutra is non-greasy, stainless and delicately scented. Furthermore, it's insect-repellent.

The use of this preparation permits you to expose yourself to the sun's rays for longer periods than if you were without its protective effects.

For better sun-fun and sun-health . . . prevent painful sunburn with an application of Sutra!

Accepted for advertising in the publications of the American Medical Association.

TWO SIZES

65¢ and $1.00. At better drug and department stores. Or send in the coupon below.

ARTRA COSMETICS, Inc.

Distributors

BLOOMFIELD • NEW JERSEY

ARTRA

12 ROOSEVELT AVENUE Dept. 100 BLOOMFIELD, NEW JERSEY

I want to try Sutra. Remittance for
(Trial Size) 20¢ [ ] 65¢ [ ] $1. [ ] tube (check size) is enclosed.

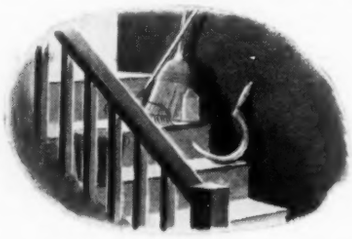
NAME.....

ADDRESS.....

CITY..... STATE.....

HOME SHOULD BE **the safest place in the world . . . but it seldom is. As a result of home accidents, someone dies every 16 minutes. Moreover, someone is disabled every 7 seconds—four times as many people as are injured in motor vehicle accidents.**

These tragedies can be *guarded against.* How? By making sure that someone in every family is wide-awake to danger spots in the home and that safe conditions are maintained and good safety habits practiced.



Do you know the most dangerous part of the house? More serious accidents occur on the *stairs and steps* than in any room. You should make sure that stair treads and handrails are in safe condition; that stairs and landings are well lighted and kept free of toys, brooms, or other objects over which someone might fall.

Do you know the room where most accidents occur? The kitchen. Here you should keep the floor free of slippery substances; keep gas burners clear of grease and regulated to prevent too high a flame; fasten curtains and other flammable materials so they cannot blow into flames; turn handles of pots and pans on the stove so that children cannot reach them; and keep matches beyond children's reach, too.

Do you know what causes half of all home accident deaths? Falls. That's why you should provide safeguards to prevent falls on stairs, on slippery floors and loose rugs. Some 80% of the deaths by accident among persons over 65 years old are caused by falls. Windows, porches, and stairs should be especially guarded in homes where there are young children.

Do you know how to avoid dangers most common in bathrooms? Use a skidproof mat in the bathtub, and have a handhold on the wall. Keep soap in its container—out of the tub and off the floor. Don't touch electrical equipment while in the tub or while hands are wet; disconnect heaters and curlers before leaving the room. To avoid scalds, test water temperature before bathing.

Do you know the poisons in your home? You should be familiar with each one—medicines, cleaning substances, etc.—and know its antidote. Keep poisons in plainly marked containers, out of reach of children and preferably in locked cabinets. *Never* take a medicine in the dark.

Write today for a copy of our free booklet, 71-Z, "Home Safety Quiz."

COPYRIGHT 1941—METROPOLITAN LIFE INSURANCE CO.

Metropolitan Life Insurance Company

(A MUTUAL COMPANY)

Frederick H. Ecker,
CHAIRMAN OF THE BOARD

Leroy A. Lincoln,
PRESIDENT

1 MADISON AVENUE, NEW YORK, N. Y.

Painful Shoulders

(Continued from page 531)

frequent type of painful shoulder affection includes infection with pus germs, characterized by extreme tenderness and high fever; it necessitates surgical opening and draining. Tuberculosis of the shoulder causes slow destruction of the joint with relatively little pain; it responds favorably to rest and general sun treatment. There also may occur various growths or tumors in the joint. All these conditions can be recognized by close clinical observation and early x-ray examination.

Also known are so-called referred pains in the shoulder which are due to some pathologic change in the spinal cord or the chest such as an aneurism or enlargement of the main artery or aorta of the chest; a new growth or tumor somewhere between the lungs and the spine; locomotor ataxia affecting the cervical part of the spinal cord; and most frequently heart disease leading to attacks of angina with typical radiations to the left shoulder and arm. These shoulder pains are often puzzling until painstaking medical observation discovers their real cause.

"Snapping" shoulders sometimes produce an audible noise or click in the shoulder. This sound is usually due to a slipping of a rigid tendon or bony prominence or to an irregular movement (subluxation) in the joint itself. In some people this slipping occurs habitually and they learn to produce it themselves. This condition requires no special treatment: there is no significance to the snapping.

Pain in the shoulder may be due to one of many underlying causes and a thorough study by an experienced physician is required for effective treatment. There is no room for self treatment by salves, patent medicines or by volubly advertised electrical contraptions; neither is there any real basis for the glib assurances of poorly educated nonmedical "healers" that they can cure a painful shoulder by manipulations. People listening to such poor advice usually travel a much longer and more painful road to recovery.

STORING the SURPLUS

PLANS FOR "defense gardens" designed to furnish the vegetables needed by a family for an entire year must be accompanied by equally well thought out plans for storing the surplus. Otherwise, the food values so carefully cultivated during the summer may not be available for use during the winter months. Various methods of storing and preserving can be used, some better suited to certain types of vegetables than others. One of the least expensive and most generally applicable methods is that of home canning. If proper precautions are taken this method can be applied to practically all types of garden produce and even to meats and meat products.

Vegetable gardeners may feel some concern as to the nutritional values of the home-canned product, particularly the vitamin content. Such concern is justified because there is experimental evidence which shows that the vitamin values of canned foods may be less than those of the fresh product. The amount of reduction depends

If suitable precautions are taken, home canning—one of the cheapest and most generally applicable methods of storing the surplus—can be applied to practically any type of home-grown garden produce.

on the vitamin concerned, the kind of food being canned, and the method of handling the product. Vitamins A and G (riboflavin) appear to be little affected by the canning process, although there may be some loss of vitamin A if the food is improperly stored before canning. Those vitamins most likely to be affected are vitamins B_1 (thiamine) and C (ascorbic acid). These vitamins are both soluble in water and sensitive to heat; therefore they may be lost in preparing the vegetable for canning as well as in the actual heat processing. Vitamin C also is easily lost if the fresh vegetable is allowed to stand for a considerable period of time without proper refrigeration. However, if proper precautions are taken these vitamin values may be retained in large measure and in some foods may be present in almost their original potencies. It has been demonstrated that home canned tomatoes and tomato juice, for example, when canned by appropriate methods, are practically as rich in vitamin C as the fresh product.

Farmers' Bulletin No. 1762, Home Canning of Fruits, Vegetables and Meats, by Louise Stanley and Mabel C. Stienbarger, is a reliable source of information concerning dependable methods for home canning. In this bulletin, which may be obtained at a cost of 5 cents from the Superintendent of Documents, Washington, D. C., emphasis has been placed on methods designed to preserve all the vitamins to the highest extent possible in the canned foods. These precautions include canning foods soon after they have been gathered and carrying every step of the process through rapidly. Vitamin values also are preserved by precooking foods for a short time, packing them hot and processing them in the containers in which they are packed.

Since many of the vitamins are soluble in water, the liquid in which vegetables and fruits are canned is rich in vitamin content. This liquid should not be discarded but should be served with the food or used in soups or sauces.

Emphasis should be placed on the need for selection of methods which will render the home canned product bacteriologically safe. It is well known that fresh foods may be contaminated with the spores of the deadly Clostridium botulinum, derived from certain types of soil. These spores do not grow in air, hence are not a problem in freshly cooked vegetables and fruit. They may, however, grow in canned foods from which the air has been excluded if the food has not been processed at a high enough temperature for a long enough time. Such growth is most likely to occur in infected materials if the food is of the nonacid class.

Farmers' Bulletin 1762 defines acid and nonacid foods and describes suitable methods for the safe processing of both types of material. Acid foods include most fruits, tomatoes, pickled beets (pickled in vinegar), ripe pimentos, and rhubarb. The nonacid foods include all other vegetables such as asparagus, peas, beans, corn and also meats and poultry. Acid foods such as tomatoes and rhubarb may be processed safely at or near the temperature of boiling water (212 F.); in other words, in a boiling water bath. Nonacid foods must be processed at temperatures above that of boiling water. This means the use of a steam pressure canner in which temperatures of 240 to 250 F. can be obtained by applying 10 to 15 pounds of steam pressure.

The home canner should be warned that a nonacid vegetable or meat cannot be made acid enough to permit safe processing in a boiling water bath merely by the addition of small amounts of an acid such as vinegar or lemon juice. This can be done only if enough acid is added to pickle the food. The use of chemical preservatives such as salicylic acid, sodium benzoate and "canning powders" also should not be resorted to in home canning. Home canned foods are safe only when adequately heat processed and the use of chemical preservatives should be avoided.

Most of the equipment needed for home canning, except the steam pressure canner and the glass or tin containers in which the food is packed, may be found in most modern kitchens. Full information concerning the type of equipment needed is found in Farmers' Bulletin 1762. In many communities, neighbors have grouped together to purchase pressure canners and other equipment needed for canning, and in others, community canning centers have been established. Information and assistance in establishing such an enterprise can usually be obtained from the Agricultural Extension Service connected with any of the state universities.

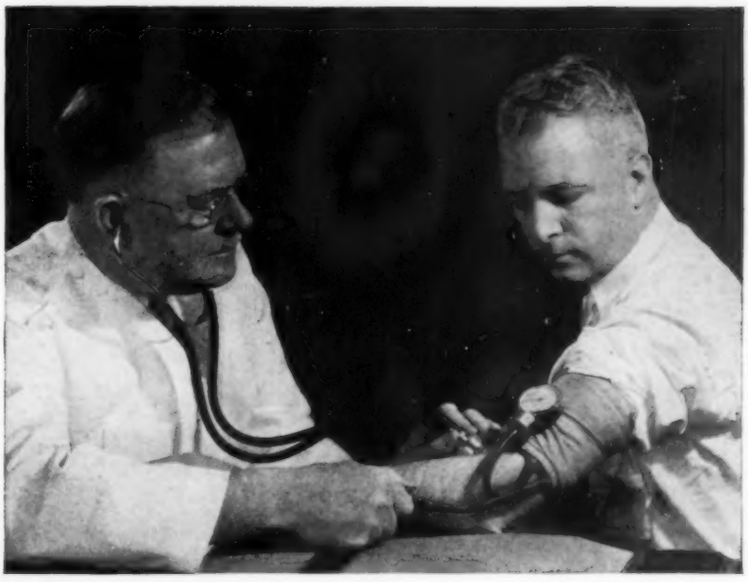
Foods may be canned at home in either glass or tin containers. If tin is used a sealing machine is also a necessary purchase. To preserve the appearance of certain kinds of food, tins with the proper enamel lining should be selected. The size of the pressure canner should be suited to the kind of container and the probable number to be handled at one time. It usually should be of from 18 to 30 quart capacity. Pressure cookers of smaller than 18 quart capacity are not well suited to canning because it is almost impossible to operate them so that the pressure, and therefore the temperature, does not fluctuate during the processing period.

Canned foods should be stored in a cool, dry place. Glass jars should be protected from light so that the food will not fade in color. All foods should be inspected before being prepared for the table, and canned food is no exception to this rule. If there is any evidence of spoilage, the food should be discarded and nonacid vegetables and meats should be burned. Canned foods should never be tasted to discover spoilage. When spoilage has occurred in nonacid foods there is always a possibility that even a taste may cause serious illness. Farmers' Bulletin 1762 recommends boiling all canned nonacid vegetables before using them. Prolonged heating (longer than 15 or 20 minutes) should be avoided, however, since this may have an unfavorable effect on the vitamin content.

VITAMIN CONTENT OF FRUITS

Each hundred calory portion of citrus fruit or of banana contributes its full quota of riboflavin, formerly called vitamin B_2, and vitamin G, to the dietary, while each hundred calory portion of tomato contributes more, and that of pome fruit (apple or pear) contributes less, Caroline Sherman Lanford, Beatrice Finkelstein and H. C. Sherman, New York, report in the *Journal of Nutrition*.

The Newer Concepts of Meat in Nutrition



Meat...

and the Diet in Hardening of the Arteries, High Blood Pressure, and Heart Disease

So often people afflicted with illness ask themselves "what have I done to merit this?" The thought that illness is punishment is as old as humanity itself. In a sense of atonement, and out of the fear of aggravating the condition, many people still restrict their diet unduly when ill. In certain ailments, such restrictions might actually prove harmful.

In hardening of the arteries, for instance, in high blood pressure, and in heart disease, many people still believe that meat should be curtailed in the diet. Your physician will tell you that proteins are needed daily, *in adequate amounts*, to assure the repair and maintenance of the tissues of the body; that a diet containing too little protein might even aggravate these conditions by leading to a water-logging of the tissues, thus imposing an additional burden on the already overworked heart.

A diet low in protein is also apt to be lacking in other food essentials, especially the important B vitamins. Deprivation of these vitamins may adversely affect the heart.

Meat is an excellent source of high quality proteins and provides vitamin B_1, vitamin B_2 (G), and the anti-pellagra vitamin, as well as the essential minerals iron, copper, and phosphorus.

Meat under the guidance of the family physician should be included in the diet of persons with hardening of the arteries, high blood pressure, and heart disease. It is easily digested, and its appealing taste aids in tempting the lagging appetite that usually accompanies these ailments.

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

American Meat Institute
CHICAGO

Stretching the Food Dollar

By MARTHA C. HOWARD

Good nutrition is almost entirely a matter of proper education. All local community groups can assist in improving the physical fitness of our population by participating in activities which will teach the best utilization of the food dollar

A full complement of protective foods is essential in preparing an adequate diet.

H. Armstrong Roberts

A WELL-FED POPULATION is essential to defense. That is a truth which is frequently overlooked in the feverish rush to build armaments, assemble airplanes and draft men. We must not lose sight of the importance of the physical fitness of our entire population in any adequate program of national defense. The food people eat is the greatest single factor in improving their physical fitness. The problem confronting many American women today is how to prepare adequate diets at the least possible cost.

To build up the physical resistance of our people is a task which offers a real and fruitful field for restless fingers and minds. It also offers the satisfaction of a task which will enrich our country as much in peace as in war and which will make our years of peace ahead more richly enjoyed and deserved.

The National Defense Commission recognizes these facts. The Consumer Advisor's Office of the Commission recommends the formation of local groups to sponsor nutritional projects in the community, since it is generally agreed that proper nutrition is not so much a problem of economic status as of education. Harriet Elliott, Consumer Commissioner of the Office of Price Administration and Civilian Supply, says: "Local community action can improve many of the social conditions which have a bearing on total defense. . . . Private civic and business organizations are as important to this program as governmental agencies —perhaps more so."

The National Defense Commission strongly recommends that local groups planning any nutri-

tional program enlist the aid of the professional nutritionists in their communities. Both the American Dietetic Association and the American Home Economics Association are registering all of their members in order to make them available for this kind of local participation in defense. But it is not only the professionals who are needed.

"Every woman, trained dietitian or not, has a job to do in the national defense program on the kitchen front," Mrs. Beula Becker Marble, former president of the American Dietetic Association, recently stated, advising women to organize study groups to learn the latest developments on the subject of diets. "It is up to every homemaker, whether her home is great or small, to make food do all the job it can do. She must see to it that each member of her family gets the food that keeps him strong and well."

A community program in nutrition education was undertaken last fall by the City of Mount Vernon, N. Y. Realizing that poorly balanced diets result in lack of resistance to infection, early dental decay, degenerative diseases and a universal lack of "glowing health," Dr. Theodore A. Jost, health commissioner of Mount Vernon, planned a community-wide nutrition campaign, with the purpose of giving the citizens information about the latest scientific discoveries of "what to eat and why." October 1940 was designated as "Nutrition and Health Month."

The response of the people of Mount Vernon to Dr. Jost's plan showed a well-developed community spirit. A Citizens' Advisory Committee on Nutrition was set up, and cooperation was obtained from many civic groups—the Women's Club, Girl Scouts, Y. W. C. A., service clubs and others. The president of the Mount Vernon Medical Society, Dr. Mark G. Kliatshco, obtained thirty-one speakers from among the medical profession. Representatives from many community organizations attended lecture demonstrations by a public health nutritionist of the New York State Department of Health and carried back to their own groups the nutritional information they had gleaned.

A report of the work undertaken in Mount Vernon is available on

"To yield to remedies is half the cure"

—SENECA

It also seems correct to say—to yield to the proper diet promotes health.

Dole Pineapple Juice has a pleasing, refreshing flavor that old and young like. Its quality is always uniform. It is the true, undiluted juice of perfect pineapples ripened on the plant in Hawaii.

Dole Pineapple Juice is a good source of Vitamins C and B-1—and contains Iron, Calcium and Phosphorus. There are 16.9 calories per ounce. It is high in quickly available food energy and yields alkaline mineral residues in the body.

The convenience of Dole Pineapple Juice is a point that should not be overlooked. Just open the chilled can—pour and serve.

DOLE Pineapple Juice FROM HAWAII U. S. A.

If You're "On a Diet"

. . . ask your doctor how delicious milk can be when made into readily digestible rennet-custards

No need to get so tired of milk, because it can be tempting, colorful, dainty, different every day . . . *and more readily digestible* because of the rennet* enzyme. It's easy to make cool, creamy rennet-custards with "Junket" Rennet Powder. Takes but a minute; no eggs, no cooking. Try some today . . . you're sure to be pleased.

*The rennet enzyme causes milk to form softer, finer, more readily digested curds in the stomach.

Make rennet-custards with either:

"Junket" Rennet Powder—6 delicious flavors . . . 6 tempting colors (at grocers),

"Junket" Rennet Tablets—unsweetened. Add sugar, flavor to taste. Now more economical—12 to the package instead of 10. (At grocers and druggists.)

ACCEPTED AMERICAN MEDICAL ASSN.

"JUNKET"
TRADE-MARK
RENNET POWDER
makes MILK into
Delicious RENNET-CUSTARDS

FREE! Send Today for "121 TESTED RECIPES."

"THE 'JUNKET' FOLKS" Dept. 337
Chr. Hansen's Laboratory, Inc.
Little Falls, New York

Please send me your free recipe book.

Name.....

Street.....

City.....*State*.....

loan and will be helpful to other communities wishing to cooperate in the national defense program. The benefits of such projects rebound to all those actively working in them. A member of the medical profession of Mount Vernon described "Nutrition and Health Month" as "a contribution to those privileged to assist in the campaign as well as those for whom it was intended. To teach is to learn!"

In Cedar Rapids, Iowa, the Junior League, in September 1938 sponsored a Community Nutrition Service, which has proved a notable success. Finding that not one of the many social welfare agencies at work in the community—however valuable the work that each was doing—was giving first place to nutrition education, the Junior League employed a trained nutritionist and invited prominent citizens to advise on the new project and to bridge the gap between the League and the nutritionist on the one hand and the city at large on the other. All of the advisors served without pay.

The women of the Junior League and others in Cedar Rapids who volunteered their aid have done varied jobs, according to their individual talents, but all closely coordinated with the more specialized activities of the nutritionist. They frequently have laid the groundwork for important community projects carried out under the immediate supervision of the nutritionist. They have helped in teaching meal planning and with the aid of the nutritionist have written news releases, planned and illustrated booklets and planned and staged radio programs.

When individual instruction in meal planning has been given either in office conferences or in home visits, a variety of questions have been met. One mother of an undernourished child came in great distress to the diet clinic:

"Tommie would grow taller and gain some weight, I know, if I could give him more of the proper kinds of food," she said, "but I can't afford to buy enough milk, fruit and other necessary foods for all my children."

This inquiry, of course, offered a challenge to both volunteer and professional workers. Tommie's mother was taken into the kitchen, and taught how to prepare appetizing dishes from ingredients whose cost is low. She also was taught how to save on some foods in order to be able to afford other, more essential ones.

"Tommie asks for oranges," his mother said. "How can I give him oranges, when it takes most all my money to buy the meat and bread my husband needs to do his work?"

So the troubled young mother was shown how to economize by buying the cheaper cuts of meat and cooking them in ways which render them as appetizing and as nutritious as the more expensive cuts. Many housewives, whatever their income level, are not as familiar as they might be with the wide variety of meat cuts available on the market. Thus they are prone to center their meat buying on a relatively few popular but expensive cuts, overlooking others which are fully as high in food value as the meat from the cuts more in demand. Tommie's mother learned how to economize on meat by using beef shank for soup or stew, for example, and by making meat loaf of the neck. She learned that, prepared in these ways, these cheaper cuts of beef are as tasty and as nutritious as more expensive cuts, and that similar economies may be practiced with other kinds of meat.

And with other kinds of food! Fresh whole milk for the children to drink may now be purchased by needy families, in many cities, for as little as 5 cents a quart, through a joint relief milk program of the United States Department of Agriculture and the local department of welfare. But for many purposes, particularly in communities where "relief milk" is not available, evaporated whole milk, or liquid or dried skimmed milk may be used. Along with countless other housewives, Tommie's mother had never been told that using skimmed milk is a good way of improving the nutritional values of the diet at low cost. Twenty-five years ago even the experts regarded skimmed milk as a waste product. Today we know that much of the food value of milk is actually below the cream line. Skimmed milk retains all of the food nutrients found in whole milk except the butterfat and Vitamin A—in other words, practically all of the valuable minerals of whole milk, particularly calcium and phosphorus, so essential for normal bone and tooth formation, and

practically all of the proteins, most of the carbohydrate, and the vitamins B_1 (thiamine) and G (riboflavin). Analyses have shown that approximately one half of the calory value of milk is contained in the skim milk.

In many communities, the mothers of underweight Tommies and ill-nourished Marys are hearing that the diets of their families contain less milk than is needed for normal growth and health. When they ask what they can do about it, the nutritionists tell them how to make use of the less expensive forms of milk to increase the food values of their diets while staying within their limited incomes. Large enough amounts of dry skimmed milk or of undiluted evaporated milk may be used in preparing soups, cereals, bread and many other foods to make them richer in milk solids than those made with fluid milk. Dried skimmed milk is even more economical than liquid skimmed milk, and, properly stored, it can be kept without refrigeration for several weeks.

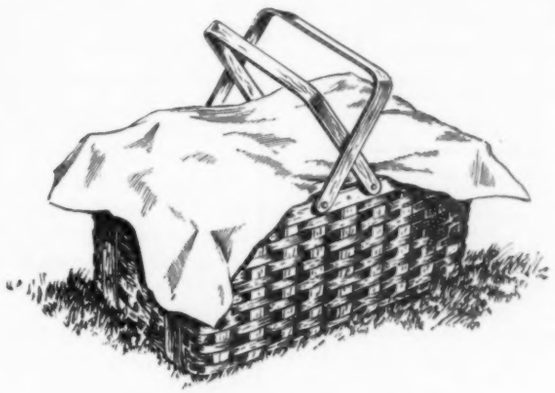
In New York City, a mother whose little girl had gained 5 pounds in the two months during which she had been eating the government-sponsored free school lunches came to a diet clinic in genuine concern.

"Don't think I'm not glad for what the school lunches have done for Mary's weight," she pleaded, "but it's made me ashamed of what I set before the child at home. You give her butter for her bread, and at home she has to eat it dry or else spread it with bacon grease. Somebody told me she ought to have butter to get the vitamin A in it, but I can't afford to buy it."

The nutritionist of the welfare group conducting the clinic told Mary's mother that there are many good brands of margarine now available which make wholesome, tasty and nutritious spreads for bread and which now are fortified with vitamin A. These usually cost about half as much as butter. Margarine in this country today is largely made of refined cottonseed, peanut, soybean, or other domestic vegetable oils, churned in pasteurized skim milk. Vitamin A usually is added in the form of a concentrate prepared from cod or other fish liver oils.

No table spread alone can be depended on to supply vitamin A in

What this country needs is...



MORE PICNICS

...then you'll see how much fun it is to get your daily quota of Enriched Bread

Yes...more picnics to help relieve taut nerves...to furnish opportunity to let off steam...relax...put us all in better shape to face each new week as it comes along.

Kids need more picnics.

Grown-ups need more picnics...parents...and teachers...and white collar workers...and laboring people...everyone.

There's another fine thing about picnics. Picnics mean sandwiches...and sandwiches mean good bread. And good bread helps to make stronger, healthier, sounder bodies...especially when you prepare your sandwiches with the new Enriched Bread containing so many of those vitamins and food minerals essential to growth and health...like Thiamine (Vitamin B-1), Nicotinic Acid (the pellagra-preventing vitamin)...calcium... a good supply of iron...to name the most important.

So have more picnics...use more of the good Enriched Bread your grocer and baker has for you. Use this bread with *every* meal...picnic or indoors. Consider its value when each member of the family gets at least two slices with each meal...each day. It can help build up yourself...your children...your country.

American Institute of Baking

DEPARTMENT OF NUTRITION

10 ROCKEFELLER PLAZA NEW YORK, N. Y.

PROPER COOKING

the ADE-O-MATIC way

means more NUTRITIOUS FOOD

Science has discovered that all "good cooks" do not, necessarily, cook food healthfully, because ordinary methods simply fail when it comes to the important matter of conserving fully, vitamins and soluble minerals. Now it is possible to cook thoroughly without boiling away or losing so much of these healthful elements.

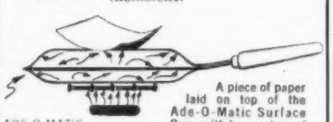
Everyone knows that heat travels from its source in three ways: by Conduction, Radiation and by Convection as shown in the following diagrams.

COOKING BY CONDUCTION

This is the ordinary way, with the flame contacting the pan giving intense heat in one spot, which often destroys part of the food before cooking *all of it*.

COOKING BY RADIATION

Used alone this method would be more satisfactory but it is impracticable and inefficient.



ADE-O-MATIC SURFACE OVEN

A piece of paper laid on top of the Ade-O-Matic Surface Oven with burner turned on will not burn.

COOKING BY CONVECTION

This is the scientific, Ade-O-Matic way which converts conducted and radiated heat into convected heat, a method that, like baking, cooks food thoroughly (clear through), without scorching or burning; makes it more delicious, more acceptable to the digestive system (even fried foods).

THE ADE-O-MATIC SURFACE OVEN IS THE SIMPLE, ECONOMICAL WAY OF CONVECTION COOKING ON TOP OF THE STOVE

Try this new scientific method of cooking tomorrow. You can buy these colorful, heat-proof enameled units, bearing the Good Housekeeping seal of approval at your department store, hardware or chain store for 59c each. Ade-O-Matic prevents scorching and burning even when pan is "boiled-dry;" serves as double-boiler. Permits "waterless cooking" the safe, convenient, low-cost way. Order direct if you wish for 10c extra to cover mailing.

ADE-O-MATIC CO.

400 NO. MICHIGAN AVE. • CHICAGO, ILL.

sufficient amount for adequate nutrition. Mary's mother learned that the sources of vitamin A in nature are numerous and that fresh or canned vegetables are an additional economical source. Green and yellow vegetables, including carrots, sweet potatoes and spinach or turnip greens are among the most important sources, but fresh or canned tomatoes and dried apricots and prunes also are rich in vitamin A.

These are but a few of the many ways in which low-income families may be taught, through community programs, the most advantageous use of their limited food funds.

Community groups, in addition to working with individual homemakers, may give group instruction through agencies such as the Y. W. C. A., the P. T. A., and W. P. A.; mass education through newspaper and radio and distribution of educational literature; budgetary advice to public welfare agencies; and advice on well-balanced meals to institutions feeding both children and adults. And not least important, these volunteer workers are constantly bringing important facts about nutrition into their own homes.

Although the Cedar Rapids group preceded the national defense program by about two years, they have actually been preparing for nutritional defense. They've been putting into practice the suggestion of Dr. M. L. Wilson, advisor on nutrition to the National Defense Commission, who says: "What is required today is to make nutrition-conscious the 45,000,000 persons who are below 'the safety line.' If, as we know today, a good diet has a definite relation to efficiency, ability to work and keenness of nerve is it not doubly important in view of preparation for national defense that the nation have a thorough knowledge of what is a good diet?"

Homemakers in Cleveland, during the last two years, have volunteered as teachers of nutrition, with interest and profit to themselves, as well as to the community. In the Fall of 1938, Mrs. Alice Smith, nutritionist of the Cleveland Health Council, called for all housewives with training in home economics to help in giving nutritional information to neighborhood groups. She offered a brief course to bring any such volunteers up to date on developments in nutrition. The response was immediate. Eight women entered the course and volunteered their services; by 1940, the number had increased to 20. The group is composed mainly of young married women who have been using their training in home economics in their own homes. They have a good combination to offer—experience in both teaching and practical application of their subject. Although the value of this combination is unquestioned, willing but untrained volunteers need not be discouraged, as witness the Cedar Rapids and Mount Vernon projects. The volunteers in each of these projects all share one fundamentally important quality—a genuine interest in their community and in their fellow citizens. Also, their volunteer work in nutrition helps them to provide more economical and more satisfactory nutrition for themselves and for their own families.

Civic nutritional programs everywhere have proved their worth, and there is a great opportunity for their expansion in the present movement for national defense. Any local group, wishing to help in the present crisis, will find rich reward in helping to improve the physical fitness of the less fortunate members of their community, an activity which will be as desirable in peacetime as in time of war, even though the immediate purpose is that of national defense.

Many free pamphlets and bulletins are available from the United States Department of Agriculture which will answer questions on nutrition and give information on more economical ways to prepare familiar foods, as well as recipes for the use of cheaper foods, which are often equal in nutritive value to the more expensive ones. A few suggested bulletins are listed below, but many others also are available from state agricultural colleges and health departments. The nutritional division of the Federal Security Agency will also send "kitchen front" pamphlets.

Daily information on foods which are good buys is being supplied in several cities through radio market news broadcasts provided by government agencies. Station WBIG in Greensboro, N. C., was a pioneer in such market news broadcasts, which are now on the air in many other cities, including Boston.

Springfield and Worcester, Mass.; New York City; Cincinnati and Cleveland, Ohio; Kansas City, Mo.; Minneapolis and St. Paul, Minn. These services are provided by either a municipal, state, or federal agency.

HELPFUL BULLETINS

Consumers' Guide

A biweekly publication of the United States Department of Agriculture. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents a copy, 50 cents a year.

The June 1940 issue gives brief suggestions for making the food dollar buy more in nourishing, balanced meals. Pages 10-11.

The October 15, 1940 issue presents simple facts to help make your meat dollar go farther; it describes food values, kinds of cuts, quality grades and methods of cooking. It includes diagrams showing the various cuts of beef, veal, lamb and pork. Pages 6-9.

In the November 15, 1940 issue is a helpful table showing three good diets at three levels of cost. Pages 10-11.

Other issues of *Consumers' Guide* give similarly helpful information.

Dry Skim Milk

Issued by the Bureau of Home Economics, United States Department of Agriculture, Washington, D. C., July 1938. Free.

This leaflet gives information about the uses and values of dry skim milk; it includes a number of recipes which use skim milk.

Dry Skim Milk Has Various Uses

United States Department of Agriculture, separate from Yearbook of Agriculture, 1926: No. 940. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

This leaflet describes the food value of skim milk and its uses in breads.

Meat Dishes at Low Cost

Issued by the Bureau of Home Economics, United States Department of Agriculture. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents a copy.

This pamphlet gives information about cooking tough cuts and includes over 50 laboratory-tested recipes.

Eat the Right Food to Keep Fit

Issued by the Bureau of Home Economics, United States Department of Agriculture; Children's Bureau, United States Department of Labor; Office of Education and Public Health Service, Federal Security Agency. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. In quantity, 35 cents a hundred; $3.25 a thousand.

Diets to Fit the Family Income

Written by Dr. Hazel K. Stiebeling and issued by the Bureau of Home Economics, United States Department of Agriculture. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

HOW TO FEEL "FIT AS A FIDDLE"!
Begin every day right—with a bowlful of crisp, delicious Post's 40% Bran Flakes—the cereal with 2 extra benefits!
YES SIR, IF YOU HAVEN'T TASTED POST'S 40% BRAN FLAKES' SWELL NUT-LIKE FLAVOR . . . YOU'RE MISSING SOMETHING EVERY MORNING!
Post's 40% Bran Flakes
Wheat
A POST CEREAL MADE BY GENERAL FOODS
LIFE IS SWELL WHEN YOU KEEP WELL
. . . AND POST'S 40% BRAN FLAKES GIVE YOU TWO IMPORTANT EXTRA BENEFITS!
First, Post's 40% Bran Flakes provide bran to help protect against sluggishness. Constipation due to insufficient bulk in the diet should yield to Post's Bran Flakes when eaten regularly. (For cases not corrected in this simple manner, we advise consultation with a physician.)
Second, Post's 40% Bran Flakes are a good cereal source of phosphorus, iron and Vitamin B1 . . . an essential for maintaining good appetite and abundant energy.
Enjoy Post's 40% Bran Flakes every morning . . . to help "feel fit as a fiddle"!

THIS TOMATO JUICE IS NEVER THIN OR WATERY

Always drink Kemp's Sun-Rayed—the pure, undiluted juice of WHOLE tomatoes. Delicious. The Sun-Rayed Co., Frankfort, Indiana.

THERE'S TREE-FRESH FLAVOR IN

D. Phillips

PURE FRUIT JUICES

Grapefruit; Orange; Blended Orange and Grapefruit provide Vitamins A and B with an abundance of

VITAMIN C plus DEXTROSE Food-Energy Sugar

DR. P. PHILLIPS CANNING CO., ORLANDO, FLA.

Naturally Sweet
NO SUGAR ADDED
CHURCH'S GRAPE JUICE
Church Grape Juice Co., Kennewick, Wash.

Dieting?

Reducing Diets
by E. M. Geraghty. Recipes and nutritional information. 30 pages. 15 cents.

Watch Your Diet
by E. M. Geraghty. 8 pages. 10 cents.

The Truth About Acidosis
by James A. Tobey. 2 pages. 5 cents.

Pocket Calorie Index
compiled by Esther Bogen Tietz, M.D. 10 cents.

Why Think About Eating?
by H. J. Gerstenberger. A birds-eye view of the diet question. 8 pages. 10 cents.

Nerves and Indigestion
by Walter Alvarez. 4 pages. 5 cents.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street Chicago, Illinois

America's Favorites

Britain's American Hospital

(Continued from page 534)

fortunate victims may walk again and be able to use their arms. For this, the American Hospital in Britain is using science's latest methods. How well this work is done is illustrated by the fact that during the first three months of service only one limb had to be amputated. This is in marked contrast to the record in the last war, when amputations were necessarily frequently required.

Thus, Dr. Wilson, who is a warm advocate of the Orr method of treating compound fractures, says that American dollars are making an incalculable contribution to the rehabilitation of the injured in this field alone. Much interest has been expressed by the public in this practice of sealing a wound to prevent infection after fractures. Dr. Wilson believes that this method represents a great improvement over those used in the first World War. Then we felt, he says, "we had to give daily a new, painful dressing. Even with the sterilization of hands, gloves and instruments, and all the sanitary precautions possible, it is improbable that a wound could be dressed daily over an extensive period without fresh infection."

To seal a wound and to put a plaster of paris cast around it means that not only is the wound at rest but the patient is freed from the shock and pain of daily dressings. In the Orr treatment three principles are applied:

(1) Clean the wound surgically and fill it with sulfathiazole, the newest modification. (2) To get reduction of a fractured bone which has been broken in several pieces, it is impossible to put the bones end to end. Pins are placed in each main fragment of the bone, and the fracture reduced by the use of a special machine. (3) The whole limb is then wrapped in plaster of paris. It is sealed and not touched again for weeks, possibly as many as four or five.

The American Hospital in Britain is one of the institutions supported by the British War Relief Society. Already allotted $155,300 by the Society, the American Hospital needs more than $100,000 yearly, which the Society is now in process of raising in this country. To mention only one of the other organizations typical of the Society's vast network of emergency relief and service in Britain, the American Ambulance, Great Britain, operates a mercy fleet of 106 ambulances, 54 mobile surgical units, 50 first-aid vans and 50 personnel wagons. Supervised by American businessmen in London, this organization has a staff of 1,000 doctors, nurses and drivers. To maintain this work the British War Relief Society is appealing for $350,000 a year.

When Dr. Wilson returned in January to resume his duties as Surgeon-in-Chief of the Hospital for the Ruptured and Crippled in New York City, Dr. Wallace H. Cole flew via Lisbon to England to become Surgeon-in-Chief of the American Hospital in Britain. Dr. Cole comes from St. Paul, Minn., where he is Surgeon-in-Chief of the Shriners' Hospital for Crippled Children, Associate Surgeon-in-Chief of the Gillette State Hospital for Crippled Children, and Professor of Orthopedic Surgery at the University of Minnesota.

More than 700 active branches of the Society are at work in all parts of the country, raising funds to maintain its program of relief. To date over $9,000,000 have been raised and dispensed. With national headquarters at 730 Fifth Avenue, New York, the Society is the largest organization in the United States engaged solely in relief to Great Britain.

QUESTIONS AND *Answers*

Proper Schoolroom Temperature

To the Editor:—What is the proper temperature for a schoolroom for 6 and 7 year old children? The thermometer is on the wall five feet above the floor. The seats of the children are about twelve or fourteen inches from the floor. The seats next to the windows are colder than the others.

T. H., Tennessee.

Answer.—The temperature of the room should be that which is conventionally considered appropriate: about 70 degrees F. There should be no marked deviation either above or below that point.

Bifocals

To the Editor:—What is your opinion of the new method of having two pairs of glasses made instead of the bifocals, the one pair only being corrected to fit the eyes and the other merely a magnifying glass to clip over the first pair? Has this been devised mainly to take care of those persons who found it difficult to get accustomed to the bifocals, or is it of benefit to the eye and preferable to the bifocals?

I cannot help thinking that looking through two superimposed glasses would put more strain on the eye, also that there is a possibility that the top glasses might not always be placed in the proper position?

J. T., Arizona.

Answer.—The method suggested is not new. It may be applied as a temporary expedient, or when bifocals may not fully satisfy the specific needs of the patient. It is not considered an adequate substitute for bifocals because of many physical and physiologic conditions which such an arrangement cannot satisfy. Superimposition of lenses reduces the effectiveness of the combination but if properly considered need not cause strain. The proper position of both sets of lenses is of great importance.

Pregnancy After 40

To the Editor:—What possibilities of physical mishap are there for a woman of 44 in giving birth to a child? What possible impairments to kidneys or other organs are apt to follow?

J. W., New York.

Answer.—A woman who is in good physical condition may have a baby at any age, within the limits of her fertile years. She would not necessarily have any greater chance of having complications at 40 or over. Impairment of the kidneys or other organs may be seen at any age and is often due to unpredictable factors which may occur in any pregnancy. A healthy woman of 44 who has good prenatal care will usually deliver a baby as easily and without complication as a woman in her 20's.

Nervous Habits

To the Editor:—My son is now 13. For two years he has had a habit of putting his fingers in his mouth to moisten them. When we ask him why he does it, he says his fingers tingle, even hurt a little, and that he has to have them wet. Now is he ashamed of the habit and puts snow on them or runs cold water on them. What causes him do this? Is there anything I can do to correct this habit?

R. S., New York.

Answer.—Habits involving peculiar muscle movements are frequent. As a rule, these bizarre motions are utilized for the purpose of drawing attention. When other members of the family show undue concern, such tricks become weapons used by the child against a world of adults in order to occupy the center of the stage.

In the case of a 13 year old child, however, the cause goes deeper. It is unnatural for a boy of this age to remain indulgent in these purposeless infantile movements in order to gain attention. He should be able to occupy the center of the stage by more legitimate means than parental worry. Tactics of this sort would point to an unstable personality. This handicap can be corrected if suitable medical and psychologic advice is sought and followed.

There is also another factor which may work singly or in combination with this attention-getting device: These movements may be the result of pubertal changes. Indeed, the rapid growth of the endocrine glands at this age frequently gives rise to emotional upheavals and to circulatory disturbances. Hence, the "shame" and "tingling" or itching in the finger tips.

If the boy is otherwise healthy and of a happy disposition there is little necessity for concern. In any event, a careful physical examination by a competent physician will do much to reassure the boy and his parents.

Mouth Breathing During Sleep

To the Editor:—How can I overcome breathing through my mouth during sleep?

D. A., Minnesota.

Answer.—Physiologically there is not much that can be done about this condition. Some people find a solution by going to sleep in a different position—on the side instead of on the back. But, since most people change positions frequently during sleep, this does not always help. If a person does not breathe through the mouth habitually during waking hours, it is probably the natural decrease in muscle tone during sleep that allows the mouth to fall open and bring about the unpleasant feeling due to excess drying.

About the only practical measure is a sling or bandage that will hold

Why I switched to **Meds**

—by a dancer

Like lots of girls who are plenty active, I'm keen about *internal* sanitary protection and I'm always on the lookout for any improvements. So the minute I heard Modess had brought out Meds —a new and improved tampon—I got some quick. And am I glad! Meds give me *wonderful* protection for they're the *only* tampons with the "Safety Center." As for comfort, I hardly know I'm wearing Meds. And imagine! Meds cost only 20¢ a box of ten—they're the *only* tampons in individual applicators that cost so little!

EACH IN INDIVIDUAL APPLICATOR

MADE BY MODESS

Meds

INTERNAL SANITARY PROTECTION

Exercises for Business Women

10c • ILLUSTRATED 12 PAGES • 10c

AMERICAN MEDICAL ASSN., 535 N. Dearborn St., Chicago

the jaw closed during the night. Such slings are often worn by chronic mouth breathers—after the removal of an obstruction in their nasal passageways—until they learn to breathe through their noses again. If such a bandage is used, it must be tight enough to keep the mouth closed but not so tight that it will interfere with the circulation of the blood to the skin and thus become unpleasant or painful. If an elastic bandage is used, it must be relatively loose.

However, a physician should inspect the nasal passages. These passages may have an obstruction which will permit nasal breathing during waking hours, but during periods of relaxation the obstruction may be sufficient to cause a natural shift to mouth breathing.

Frequent Permanent Waves

To the Editor:—My daughter, age 14, has had three oil permanents, one at the age of 9, another 11, and the last about nine months ago. Her hair is very fine. Will an oil permanent every year harm her hair?

G. C., Illinois.

Answer.—As a rule permanent waves as now given are not detrimental to the hair or scalp. The oil permanent could, in all probability, be used with safety once a year. In a person as young as 14, frequent permanents should not be employed.

Pigeons and Paratyphoid

To the Editor:—Last year I was caring for some pigeons that had paratyphoid, common today among domestic pigeons. In transporting them in baskets for flying purposes, or shipping them to pigeon shows, with no thought of quarantine, fanciers have spread this disease everyhere among pigeons. What is the relationship of this disease between human beings and pigeons?

E. M., Illinois.

Answer.—The Salmonella group of bacteria which cause paratyphoid fever in man are not responsible for the disease in pigeons. There are several other members of the Salmonella group, however, which affect pigeons, especially S. aertrycke.

S. aertrycke is one of the common members of the food poisoning group of man causing a severe intestinal upset. Since a bacteriologic investigation was not made of the pigeon epidemic, it is impossible to say whether S. aertrycke was the responsible organism or not. Also, parrot fever may simulate either typhoid or pneumonia.

Eating Ice

To the Editor:—Will eating or sucking ice injure health? I like it so much I have a glass of ice always handy.

C. A., Tennessee.

Answer.—Many persons experience bowel cramps and gas in the abdomen when they eat or suck ice. Especially in hot weather, or after strenuous exercise, taking large amounts of any ice-cold liquid is not advisable. As long as no particular symptoms are observed the problem would seem to be one of personal taste. Some persons can tolerate moderate amounts of ice without harm.

Vision Testing Equipment

To the Editor:—Does the value of stereopthalmic vision testing equipment justify its purchase for a school of 1,000 high school students?

L. G., Illinois.

Answer.—If you have an expert, experienced in its use and enthusiastic about the instrument, it might be worth while to get that equipment. If you have not the expert at command, it will be quite useless in the hands of persons who have had no acquaintance with such tests.

There is much simpler apparatus, easier to understand and easier for a teacher or school principal to use, that would better serve the purpose. The fusion tubes of Priestley Smith were first described forty years ago and can be imitated by any pasteboard tube of proper size, cut in half so as to furnish a tube for each eye. There is other simple apparatus available, but the essential for any apparatus is a person who understands it.

Varicose Ulcers

(Continued from page 549)

affect the vein in its entire upward course. Under no conditions should phlebitis be massaged. Rest in bed may be required until the inflammation has subsided.

Frequently, patients with varicose veins and ulcers complain of pain and cramps in the leg other than around the ulcer area, or out of proportion to the size and severity of the ulcer. It may be found in these cases that the patients have flat feet. These patients should also receive orthopedic care if they are to be adequately treated and relieved of their symptoms.

Special care must be given to the elderly patient with a varicose ulcer, for in this type of case the circulation may be impaired in the arteries as well as in the veins. Proper tests must be undertaken to ascertain the status of the blood supply to the leg. In many cases, conservative treatment gives complete relief, while efforts, to eradicate the varicosities might be hazardous due to further interference with the already diminished blood supply to the leg.

Since varicose veins and ulcers appear mostly in people whose occupation depends on long hours of standing, it is essential that they seek early medical care. Once an ulcer has formed, the treatment of the condition is necessarily lengthened: the appropriate time to see the physician is in the preulcer stage. The patient, in any event, should profit by medical advice and receive the indicated therapy. Ruling out possible co-existing disease, the prognosis in a case of varicose ulcer is favorable providing the treatment is started early.

IMMUNIZATION

Combined immunization of infants and young children against typhoid and diphtheria is both practical and possible, John A. Bigler and Marie Werner declare in *The Journal of the American Medical Association in a report on their* observations over a two year period of 240 children so immunized.

A DEPENDABLE REMEDY

▼

SELF-MEDICATION is advisable only in those cases where the nature of the ailment is correctly diagnosed and where the effect of the remedy is known.

But it is well to know that in the treatment of those many conditions for which Bicarbonate of Soda is prescribed by the physician, full effect can be obtained by using Arm & Hammer or Cow Brand Baking Soda. No Bicarbonate of Soda on the market is purer than these dependable brands, which meet all the requirements of the United States Pharmacopoeia XI for physical properties and purity and are classified as Official Remedies by the Council on Pharmacy and Chemistry of the American Medical Association.

Bicarbonate of Soda is probably used more often than any other home remedy. So keep a package of Arm & Hammer or Cow Brand in your medicine cabinet. Our Bicarbonate of Soda can be freely used because it costs so little—just a few cents a package at your grocer's.

Business Established in 1846

CHURCH & DWIGHT CO., Inc.
10 Cedar Street New York, N. Y.

THE PERFECT
"before and after"
GARMENT

The "IT" Bra

This garment is now recognized nationally as a most perfect "before and after" brassiere. Cups are adjustable, up or down . . . an exclusive CONTROLLED UPLIFT feature. All sizes, in small, medium and large.

. . . from $1.50 at most stores, or write Tre-Zur Brassiere Co., 407 East Pico St., Los Angeles, Cal.

ACCEPTED FOR ADVERTISING IN PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION

Always TRE-ZUR lovely contours

SCIENTIFIC DEFENSE
Against Underarm
PERSPIRATION and ODOR

Science uses astringent action in NONSPI—gentle contraction of sweat gland openings so that perspiration cannot escape under the arms. Nature safely compensates through perspiration in other skin areas.

One application of NONSPI checks underarm perspiration for as long as three days. No sting or smarting. Easily applied. Acts promptly. Dries quickly. Used correctly, it does no harm to skin or clothing.

10¢ brings you a generous trial size of Liquid Nonspi. Write the Nonspi Co., 113B West 18th St., New York City.

NONSPI
Liquid • Cream
NO PERSPIRATION • NO ODOR

Emotional Disturbances of Appetite

(*Continued from page 552*)

certain specialized attitudes toward food are analogous to those encountered in certain persons in our contemporary society. Periods of fasting and periods of feasting are common both in the practices of primitive societies and in the expression of religious observances today. These contrasting attitudes toward food are usually associated with corresponding emotional attitudes. When people are gay, triumphant, thankful and otherwise in an expansive mood, they hold a feast. Fasting, however, usually occurs during periods of mourning and repentance, when the mood is contracted or depressed.

Similarly, in all primitive societies the eating and avoiding of certain foods serves a kind of magical function. In many tribes the totem animal is taboo and his flesh may not be eaten. In most human societies the flesh of man is taboo. But there are cannibalistic tribes in which the eating of the flesh, especially of the heart of the conquered adversary, is thought to endow special qualities of virtue and courage.

A type of severe loss of appetite seen mostly in young women is characterized by extreme emaciation which sometimes, if improperly treated, results in death from starvation. Closer inquiry usually reveals that there is a reaction of disgust to all or most food substances. One young woman suffering from this disturbance would eat only chocolate ice cream and peanut butter.

The phenomenon of disgust in relation to food is in itself one of interest. Steffanson, the Arctic explorer, gives an amusing account of how he taught himself to approach with relish the nauseating mess of putrid fish heads which Eskimos save as a special delicacy for their children. He did this by thinking of foul-smelling cheeses which many of us eat with gusto. The Chinese are said to enjoy eating ancient eggs, an article of diet which would probably turn our stomachs. The cultivated Englishman hangs up his game until it becomes "high" or gamey. Disgust is therefore a reaction not always consistent with the real situation. It is determined by conventional standards, personal predilections and early experience often deeply buried in the past. Young children sometimes react with disgust to certain food articles such as the fat of meat, or the skin on milk. It is best for adults not to be too authoritarian and peremptory in dealing with these vagaries, but to treat them lightly. An attitude of relaxed enjoyment is the best one to bring to the dinner table.

When the late Charles William Elliot, ex-President of Harvard University, was writing his essay on the "Durable Satisfactions of Life" he called on his cousin, Miss Grace Norton, and asked her what in her long life she regarded as among its more durable satisfactions. The old lady replied without a moment's hesitation: "My victuals, Cousin Charles, my victuals." A healthy person enjoys his food and a loss of appetite is evidence of physical, mental, or emotional illness for which medical aid should be sought.

BODY LICE

An ointment made up of the drug pyrethrum and petroleum is reported by W. K. Angevine in the *Medical Annals of the District of Columbia* as being an effective treatment for body lice, a health menace of particular importance to every army in the field. The drug is nonpoisonous to man and he says that almost as soon as it was applied the lice curled and died within a few minutes. His investigations show that the compound also may be an effective treatment for scabies.

SHRIEKING NOISE OF DIVE BOMBERS

A surgeon on a transport to France has analyzed the shrieking noise of dive bombers in a report on the "Medical Aspects of Dive Bombing," published in *St. Thomas's Hospital Gazette* of London, England.

The noise, he finds, plays an important part in producing fear. His analysis of the noise shows that it is crescendo, giving the impression of something coming at one; that it hurts one's ears, meaning that there are some notes in it which are on the edge of one's range of hearing and producing an effect like that of pencil squeaking or violin notes on dogs and that it lingers in the memory, so that one hears it or thinks one hears it for a long while after it has ceased.

His counter suggestions are: to provide ear plugs, such as self-molded bits of candlewax; to analyze the wave content of the sound and to improve on it for English use (a peculiarly "satanic laugh" could be mechanically elaborated), and to experiment with the effects of noises at both ends of the hearing range, the high and the low. He believes that the psychic effects of bombers' noises are such as to warrant serious attention.

RECURRENT TETANUS

A case of recurrent tetanus in which the second attack was successfully treated with a sulfanilamide compound is reported by Frederick Lemere and J. S. Arnason in *The Journal of the American Medical Association*. The two men say that they report the case because of its significance to wartime medicine.

The patient, a youth of 19, was treated with tetanus antitoxin during the first attack. Eighteen days after being discharged and returning to work, the original symptoms, including convulsions, recurred. He was readmitted to the hospital, given azosulfamide (a sulfanilamide compound) and sedatives. Recovery occurred in four days and he has been well since, they report.

Reveille

Wake up! Don't let summer drowsiness result in summer carelessness. When the sun is high and the air seems to hang about one like an unwelcome blanket, it is difficult to maintain a fresh, well-groomed appearance. This is when a few drops of Reveille Cologne serve as a timely reminder to wake up and freshen up . . . . Pour a few drops of Reveille Cologne in the palms of your hands; pat underneath your chin and across your temples. It's invigorating . . . . it's spicy . . . . it's cooling . . . . a joy to use after bathing. Dispel that summer lethargy and wake up with Reveille Cologne.

Luzier's, Inc., Makers of Fine Cosmetics & Perfumes

KANSAS CITY, MO.

SUMMER SKIN DRYNESS

The regular use of a little Nivea Creme or its liquid form, Nivea Skin Oil, will help to protect your skin and keep it smooth and pliable.

Reasonably priced. Available at prescription pharmacies

DUKE LABORATORIES, INC.
STAMFORD, CONN.

Nivea, Reg. U.S. Pat. Off.

Need Health Material?

Send for free catalog—

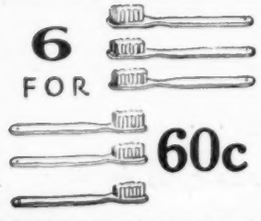
"Health Publications of the American Medical Association"

American Medical Association, 535 N. Dearborn St., Chicago

DENTISTS USE THIS BRUSH BECAUSE IT'S DESIGNED FOR BEST RESULTS!

Correct, modern massage-brushing is possible *only* if the toothbrush is a properly designed instrument to facilitate the prescribed technique. TAKAMINE does more than meet dental requirements for quality and design. For, *only* Takamine encourages frequent renewal by its practical low cost that makes it possible for everyone to change to a new sanitary brush at least once every month.

TAKAMINE



6 FOR 60c

TAKAMINE CORP. 3921
132 Front Street, New York City

If your drug or toilet goods counter cannot supply you with Takamines, send 60c to us for INTRODUCTORY package of 6 Standard Takamine Toothbrushes.

Name.....

Address.....

SEND COUPON

Development of Blood Banks

(*Continued from page 545*)

ologous transfusions and was excreted in the urine—causing the black urine so often noted. These investigations supported the growing conviction that only human blood should be used. Even so, unexplainable reactions and deaths occurred.

Hemorrhage, the chief indication for transfusion, was gradually supplanted, at first rationally, by anemia, sepsis and carbon monoxide poisoning; then, as enthusiasm grew, haphazardly, with little more indication than three centuries earlier. The chronically ill, the tuberculous, the burned, the uremic, the syphilitic and the mad were all transfused. Danger of infection, both local and systemic, and a bloody, cumbersome technic made human donors difficult to obtain. Animals, especially lambs, were commonly used, despite the evidence against the use of foreign blood. Severe reactions and fatalities again gave the procedure the reputation of being a hazardous last resort. The injection of saline solution, which had become established as a safe, beneficial procedure, supplanted transfusion after 1875.

Further progress was stimulated by phenomenal changes in medicine made by bacteriologists. Aseptic technic enabled the surgeon to operate without fear of postoperative infection. Hemorrhage and shock then became the chief causes of death following surgery. Efforts to combat them again roused interest in transfusion. Two important advances were made. Donors no longer risked an incapacitating or sometimes dangerous infection or phlebitis in return for their generosity because aseptic technic assured clean healing. The study of immunologic reactions revealed some of the causes of untoward reactions which plagued the recipient. It was shown that the intravenous injection of blood corpuscles into an animal of another species produced substances known as antibodies which caused the dissolution of the injected corpuscles. The demonstration that human blood serum possessed the power to dissolve corpuscles of other species put an end to the use of animal blood for transfusions.

The final step in explaining the cause of fatal reactions following transfusion began in 1900, when it was shown that human blood serum contains agglutinating substances capable of clumping red blood corpuscles from humans whose agglutination reactions are dissimilar. Seven years later the significance of this was appreciated, and the fact that the wrong type of human blood might be as dangerous as that of animals was recognized. Within two years a technic for determining whether donor and recipient had similar agglutination reaction was devised. It then became possible to select donors whose blood was compatible with that of the recipient, and the danger of severe or fatal reactions was eliminated. The work on human agglutination reactions has been elaborated until now four major groups and seventy-two subgroups are recognized. Since agglutination reactions are hereditary, it is possible to identify the origin of any sample of blood, not only as to species, but also, in the case of man, as to blood group. Light can be thrown on some phases of questionable paternity on the basis of such information. Transfusion has become so common that we often forget that a dozen scientists over the course of forty years contributed the observations which removed all risk from the operation.

The problem of finding the best method of transferring blood from donor to recipient was the last to be solved. One point of attack was to transfer the blood so rapidly that there was no opportunity for clotting to occur. Such devices were modifications of Lower's single tube or Blundell's "Impellor." Even modern versions of these instruments require a certain amount of mechanical skill and simultaneous insertion of a hollow needle into the veins of donor and recipient.

Many investigators studied the clotting of blood. Prior to 1900 it was shown that contact with foreign substances or tissue juices hastened clotting, while collecting

the blood in vessels carefully coated with vaseline or paraffin delayed clotting several minutes. Only the lining of the vessels themselves could contact blood without causing coagulation. By 1905, surgeons solved the problem by ingenious methods of fastening the donor's artery to the recipient's vein so that blood flowed from person to person through living blood vessels. The technic was difficult, and few surgeons could perform it. It meant an operation for both parties, and, since it actually connected the donor and the recipient, it afforded no protection against the contraction of disease from the recipient. These disadvantages made it difficult to obtain donors and established prejudices against serving as a donor which still persist.

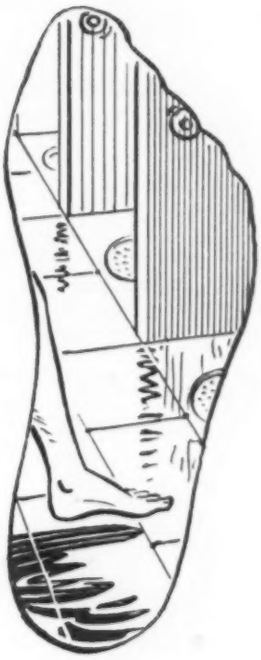
In 1911 the idea of collecting blood in a vessel coated with paraffin was revived. Clotting was delayed long enough so that the donor need not be in the same room with the recipient—a distinct advance. The method found wide acceptance and persisted for twenty-five years.

During the World War the simple, easy technic of adding sodium citrate to blood as an anticoagulant was developed. This chemical prevents clotting in concentrations as low as .05 per cent. Thus one pint of a donor's blood could be kept free of clots by the addition of only ½ teaspoon of sodium citrate. Skilled assistants were unnecessary; the apparatus was not complicated. Since clotting was prevented indefinitely, the donor could be bled whenever and wherever convenient, and the infusion of blood could be done later. Military surgeons found the method ideal because blood could be collected and preserved for use in base hospitals. Today the majority of transfusions are given by this technic.

The ability to delay the clotting of blood has been responsible for the development of blood banks in modern hospital practice. The purpose of such banks is to have preserved blood instantly available for patients of any blood group. This is accomplished by collecting blood either from friends of the patient, or from volunteer donors, regardless of type, and depositing such blood in the bank in exchange for blood of the type suitable for immediate infusion into the patient. The newly deposited blood is sub-

"GOOD OLD IODINE"

FOR COMBATING ATHLETE'S FOOT



Swimming, golfing, boating, fishing—bare feet, wet feet, perspiring feet—they all are part of the great summer vacation picture, but conducive to that distressing foot infection popularly known as "Athlete's foot."

It pays to give your feet a little extra care during the vacation season. In the patches of dead or soggy skin, the dormant germs of "Athlete's foot" are harbored by most adults. Iodine is a notably effective agent for killing those germs or fungi.

After your shower, swim, or before going to bed, make sure that the feet are thoroughly dry, then cover all patches of dead, dry skin with the Mild Tincture of Iodine (2%). It's quickly applied, effective, economical.

"Good old Iodine"—reliable, time-tested, available at all druggists. Keep a bottle handy.

IODINE EDUCATIONAL BUREAU, INC.
120 BROADWAY • NEW YORK, N. Y.

sequently typed and kept ready for the next emergency.

Hemorrhage, whether due to injury during operation or resulting spontaneously from disease, continues to be the chief indication for transfusion. The infused blood acts as a substitute for that lost and quickly relieves the symptoms produced by the bleeding.

In the treatment and prevention of shock—the death-like state so well described by Oliver—transfusion alone can combat the fast, thready pulse and unconsciousness characteristic of an impaired circulation. In this condition, the fluid portion of the blood leaves the arteries and veins by actually leaking out through a wound or by filtering through the walls of the smallest blood vessels into the damaged tissues. In either case, the circulating fluid is lost from the blood stream, and there is no longer sufficient quantity of blood in the vessels to permit the heart to maintain a circulation adequate to carry oxygen from the lungs to the tissues to support life. Many substitutes for blood have been tried, but none have been of more than temporary value in preventing death because they merely dilute the blood rapidly and increase the rate of loss of circulating fluid. If blood is injected, the volume of circulating fluid is quickly restored because the colloidal properties of the transfused blood prevent its leaving the vessels. Plasma, the fluid portion of blood, has been shown to be the effective factor in maintaining the volume of circulating blood. This fact has great clinical importance because the clear plasma can be injected safely into any recipient without preliminary typing since the corpuscles, which might be clumped or dissolved by the recipient's serum, are not injected. Plasma from many donors can thus be pooled and preserved for instant use. It can also be dried to powder form and stored indefinitely without deterioration. When needed, it can be dissolved speedily in sterile water and infused.

Blood transfusion is generally recognized as an effective means of preparing malnourished, debilitated or anemic patients for operation. It also hastens the convalescence of many who survive extensive operations but who do not rally or suffer unexpected complications postoperatively. Hemorrhagic diseases are often controlled by transfusion, the new blood providing the elements essential for checking further bleeding.

The transfusion of blood is useful in the treatment of severe anemia because the infused red blood corpuscles immediately serve as oxygen carriers. Donors' cells live and function for an average of eighty-three days—sometimes as long as one hundred and thirteen days. This relieves the demand for blood and permits the blood forming tissues to rest and resume the production of red cells.

Various acute and chronic infections benefit from blood transfusion. In some, the donor's blood may contribute immune bodies which actively combat disease; in others the general condition of the patient is improved by the transfusion, and thus resistance to infection is increased. Intoxications which damage the red cell—carbon monoxide and nitrobenzol poisonings for instance—are often treated by transfusion.

Obviously the recipient benefits from all these—but what of the donor? Careful study of the effect of blood loss on the donor has revealed no harmful results following the donation of a pint of blood at intervals of four to five weeks. One donor, a laborer, is reported to have given 257 quarts of blood over a period of 12 years with no ill effects. Another donor, a woman, gave 140 transfusions of a pint each during seven years. Yet another gave 144 quarts of blood in 6 years.

Records such as these should dispel the fear of giving blood which persists from the days when the ignorant were exploited by professional donor bureaus and bled so profusely that they suffered from severe anemia. Any one in good health is suitable for service as a donor. The chief requirements are freedom from communicable disease and compatibility with the recipient. Large, readily accessible superficial veins and emotional stability make males more desirable. Young, vigorous adults, 18-45, seldom notice any untoward effects following the withdrawal of blood. Every donor should have a physical examination as self-protection. Those who are anemic or have chronic disease need all the blood they have. Those who have syphilis, smallpox, malaria, influenza, measles, or any acute illness must be discovered before the disease is given to the recipient.

These are the facts. Transfusion is now a safe procedure for both donor and recipient. It can be quickly and easily performed by any physician, so that its restorative powers should be readily available to any one—not as a last minute resort to prevent death, but as routine therapy whenever indicated. The life-saving operation is not used as widely as it should be, chiefly because donors are difficult to obtain. As in 1840, the patient needs blood; a competent profession stands ready to serve; but kindhearted neighbors must be sought each time. Often this delay negates the value of transfusion; or else the cost of professional donors is prohibitive. Disaster may boost the demand for donors far beyond the supply or the technical facilities available at the moment for typing and collecting blood. To obviate these difficulties, blood banks have been established where blood or plasma can be collected and stored ready for emergency. Such service can be made available in any community which demands it. In other communities, good neighbors have banded together and hold themselves ready to give transfusions on a moment's notice. Such community enterprise is often commended but seldom imitated, because most people believe the necessity of a transfusion to be a rare occurrence. Although many plan for illness, few realize that sudden illness often throws the helpless sufferer on the resources of the community. For example, an auto accident may place your life in the hands of strangers who may have to search frantically for a suitable donor. Hence, transfusion should be a problem for the well—insurance against the day when a quart of blood given promptly may prevent death. Kindhearted neighbors are needed in the small community because facilities are usually lacking to provide such service for more than a lucky few who reach hospitals where a small donor service has been organized, or where a meager blood bank is maintained. Self preservation should be a sufficient reason to establish a blood bank or plasma pool in your community.

Athlete's Foot

(Continued from page 524)

tologist—with care and patient observation, and by employing various investigative measures including cultures and skin tests—can usually determine whether or not a particular case is actually one of athlete's foot, or one in which the germs of athlete's foot are at least the principal, if not the only, cause of the skin eruption.

Consultation with a skin specialist in cases of persistent eruptions of the feet and hands is often necessary for still another important reason. There are several different forms of athlete's foot, different forms caused by different species of fungi. Many of these different forms differ in their course, in their contagiousness, and in the measures required for successful treatment. Thus, the cure of the disease and the prediction of its course may depend largely on the species of fungus present. The species of causal fungus can be determined only by expert dermatologic examinations and by culturing the germs found at the site of infection.

Although caused by a germ which is undoubtedly easily transmitted from one person to another, the transmission of the active stages of the disease is rare. In this sense, athlete's foot is surely much less "catching" than most people at present believe it to be. It is extremely rare to find an instance in which a husband has infected his wife, or in which roommates have infected each other. As a rule, such infections do not occur even when prophylactic precautions have not been taken.

Probably the real reason for the apparent small "epidemics" in schools, gymnasiums, or at swimming-pools is that the entire group has been subjected to conditions favoring activation of the dormant infection which each person was normally carrying. In other words, most apparently newly acquired active cases are not new infections, acquired from others, but are simply flare-ups of already existing

IN EVERY circle, there are women who lead and women who follow. That is how Tampax has spread so rapidly, from friend to friend, throughout the nation, until over 325,000,000 have been sold.

Perfected by a doctor, Tampax is *worn internally,* thus solving many problems of monthly sanitary protection. It does away with chafing, wrinkling and "showing." Of course Tampax is invisible, and the wearer does not even feel it. Made of pure surgical cotton, it comes to you hygienically sealed. By the use of the individual applicator, your hands need not touch the Tampax!

Tampax lets you dance without care and travel with a light heart. It cannot come apart and is easily disposed of. No belts, pins or pads. Now sold in *three sizes:* Super, Regular and Junior. At drug stores and notion counters. Introductory box, 20¢. Economy package of 40 gives you a real bargain.

Accepted for Advertising by the Journal of the American Medical Association.

TAMPAX INCORPORATED HY-71-BB
New Brunswick, N. J.

Please send me in plain wrapper the new trial package of Tampax. I enclose 10¢ (stamps or silver) to cover cost of mailing. Size is checked below:

( ) REGULAR ( ) SUPER ( ) JUNIOR

Name_____

Address_____

City_____ State_____

fungous infections. Despite this, certain measures are valuable in preventing the activation of the dormant infection in individual cases and in preventing epidemics of flare-ups in groups or families.

Here are not only the simplest but also the most effective measures to prevent flare-ups or recurrences of the disease:

(1) Dry carefully and thoroughly the spaces between the toes, and in all other areas where skin folds are close together: groins, under breasts, under arms and between buttocks.

(2) Use a mild alcoholic solution—such as a 25 or 50 per cent rubbing alcohol, or a toilet water—on these areas after drying.

(3) Liberally apply a plain, unscented talcum, or talcum and kaolin plus 5 per cent powdered boric acid to these areas and in socks, stockings and shoes.

(4) Treat all cracks or sogginess between the toes, etc., with 1 part full-strength tincture of iodine diluted with 10 parts of alcohol.

(5) Remove crumbly nail material; keep the nails cut short.

(6) Remove scaly, soggy, or excessively horny material from between the toes or from the soles of the feet.

(7) Wear socks that are absorbent but not too coarse. Shoes should be well fitting but not too air tight; sufficiently roomy, but not large enough to chafe or rub.

(8) Place pledgets of lamb's wool, absorbent cotton, or soft linen between toes that are too close together.

(9) Consult a physician as soon as there is progressive redness, blistering, scaling, or itching which does not yield promptly to the measures described.

(10) Avoid all proprietary remedies sold for eczema or athlete's foot.

These procedures are directed mainly toward reducing or preventing the formation of dead, moist, or horny material in which the fungi can multiply and reach a quantity which exceeds the limits tolerated by the skin. The use of proprietary remedies will help a few, but will make many other cases much worse; and will sometimes even cause disastrous and long-lasting eruptions. Most persons who tend to have poor resistance, or whose skins are hypersensitive to fungi, are usually inclined also to be hypersensitive to the action of the chemicals which most proprietary remedies contain.

Since most adults are already infected, the use of measures to prevent spread of the infection in clubs, schools, locker rooms and around swimming-pools are usually unnecessary, provided these simple procedures are carefully followed. However, the following types of precautions are still being recommended by many specialists:

(1) Shoes or slippers should be worn at all times, especially when walking on floors or on the ground.

(2) Slippers, shoes and socks should be either replaced or sterilized—for example, with formalin—at suitable intervals. They should never be worn by other persons whose feet may be infected with fungi.

(3) Bathtubs, bathmats and floors in households in which a member is suffering from athlete's foot should be sponged or cleansed with antiseptic solutions—for example, cresol in 2 per cent solution, or bichloride of mercury in dilution 1:1,000. Some public institutions such as public baths and gymnasiums require the routine use of footbaths containing 10 per cent sodium thiosulfate or 1 per cent sodium hypochlorite.

(4) After visits to public beaches, pools, etc., uninfected people should apply to their feet solutions designed to kill fungi—for example, 1 part full strength tincture of iodine diluted with 10 parts of alcohol, or a 1 per cent solution of gentian violet.

(5) An infected member of a household should, when possible, be given either a separate bathroom, or a separate bathmat, towel, etc. Persons known to be infected should not be permitted to come into intimate physical contact with other, noninfected members of the family.

Never use any of the proprietary remedies sold or dispensed to kill fungi and to cure ringworm or athlete's foot. Almost all of these remedies contain disinfectant or fungicidal drugs which are likely to be too strong, thus causing irritations of the particularly susceptible skin of those who are suffering from active athlete's foot. In this manner, the use of proprietary remedies often causes the disease to spread, to get worse, or to last longer than it would have lasted without treatment. Moreover, an itching or blistering skin eruption of the feet or hands may look like athlete's foot, but may be the result of some entirely different skin disease, actually not due to fungi. If you are suffering from athlete's foot, the inflammation naturally produced usually results in a certain amount of peeling. This peeling, in itself, generally carries off a sufficient number of fungi to cure the attack. But regardless of how strong the remedies applied, you will probably never succeed in killing all the fungi: You will most probably succeed only in increasing the irritation. Therefore, when you suspect that you have an attack of athlete's foot, first follow the measures outlined. Stay off your feet, if you can, and keep your shoes off as much as possible. Then, if and when the condition is acute, swollen, blistering, red, or itching the doctor will probably prescribe compresses for a few hours each day, either of a diluted potassium permanganate solution, or a solution of aluminum subacetate.

Tense blisters should be opened with a sterile pin or needle. Cracks and the bases of blisters are usually painted with 1 per cent tincture of iodine. At night, calamine lotion, or phenolated calamine lotion, is applied to allay the itching. When the condition has become dry, scaly and less active, and when there is no more swelling and blistering, either paste of zinc oxide or zinc oxide ointment, or boric acid ointment is used. These pastes and ointments can be applied in liberal quantities, and white cotton socks should be worn to keep the grease in contact with the skin at night.

If the eruption persists, if it gets worse, spreads, or tends to recur, always consult the doctor promptly to make sure of the diagnosis.

BOOKS ON HEALTH

The Control of Tuberculosis in the United States

By Philip P. Jacobs, Ph.D. Cloth. Price, $2. Illustrated. Pp. 387. New York: National Tuberculosis Association, 1940.

This book shows the development of the Anti-Tuberculosis movement in the United States. Historical aspects are touched on and the bulk of the book is devoted to the methods for the control of tuberculosis. These include education, publicity, local and national tuberculosis associations, public health liaison, case finding, hospitalization and treatment, rehabilitation and the control of the open case. Negro and other racial problems are also discussed briefly.

The author concludes with the consideration of programs he thinks necessary for the control and the possibility of eradication of tuberculosis in the United States.

This book should be of interest to phthisiologists, public health nurses and workers, social workers and laity who are interested in the control of tuberculosis in this country.

H. H. Freilich, M.D.

America Organizes Medicine

By Michael M. Davis, Ph.D. Cloth. Price, $3. Pp. 335. New York: Harper & Brothers, 1941.

In Part I "The Changing Shape of Things" traces some phases of medical progress with emphasis on technical rather than diagnostic and treatment elements of medicine. The lower death rate has increased the number of the aged, and this it is held calls for more medical care, a conclusion which evidently overlooks the medical care required for such illnesses as typhoid fever, malaria, tuberculosis and the diseases of infants. Choice of doctor is dismissed as unimportant without consideration of its potential value.

There is much valuable material in Part II, "Organization." Its thesis is that the practice of medicine is falling more and more into the hands of organizations in which at the present time medical societies are beginning to play a larger part. A somewhat mechanical view of yardsticks of service and costs oversimplifies the problem of organizing medical service. All this is a background for Part III, "The Emerging Shape of Things," where recent developments in sickness and hospital insurance, health centers, rural services, federal and state legislation and the relation between health and defense and education are all claimed to show trends toward greater social control of medical care. Such slogans as "socialized medicine" are rejected, and there is none of the excessive laudation of compulsory sickness insurance that has hitherto been characteristic of those who approach the medical program from what might be called the social service standpoint.

No one interested in medical economics can afford to omit this book from his reading, but in reading it the evident bias against the American Medical Association should be kept in mind. In the discussion of health departments, for example, the totally false impression is left that organized medicine has been almost entirely critical and antagonistic, while the fact is that there is scarcely an important state or city health department that did not originate in the activity of a medical society and that the degree of success of health departments has been closely related to their success in cooperating with medical societies.

A. M. Simons.

Your Year in the Army

By Major John D. Kenderdine, Infantry. Cloth. Price, $1.00. Pp. 204. New York: Simon & Shuster, 1940.

This book is designed as a guide and ready reference book for young men entering the military service; particularly those selected for one

Courtesy of "Collier's," The National Weekly, and the artist.

"I smell gas!"

A well-turned tool for transforming health ideals into daily practices

HEALTH EDUCATION

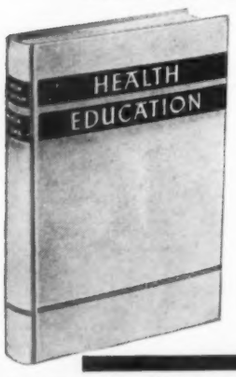
Second Revision—1941

A GUIDE FOR TEACHERS IN ELEMENTARY AND SECONDARY SCHOOLS AND INSTITUTIONS FOR TEACHER EDUCATION.

VALUABLE illustrative units of work contributed by teachers and supervisors throughout the country.

BUILT of such pertinent working material as: Trends in Health Problems . . What the Schools Can Do . . Facts All Teachers Should Know Relating to Child Growth and Development . . Facts Relating to the Protection and Improvement of Child Health . . Plans and Policies of School Administration . . Learning Situations: Processes of Meeting Them . . Learning Situations: Activities, Materials . . Reports of Learning Experiences.

368 pages . Cloth bound . 5¾ x 9 . $1.50 postpaid . Reductions for quantities.



By the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the Cooperation of Advisory Committees.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago

year of training. The author, a Major in the Infantry Reserve, writes with military precision, yet with an interesting manner and wealth of examples born of twenty-three years of experience in the army.

Most of the book is devoted to describing the process through which a selectee will be sent after receiving his call to duty. Vividly, the author relates the probable experiences and possible problems which the young soldier will meet. In an almost paternal manner, the reader is given straightforward advice as to his conduct and attitude under all these conditions. General rules of courtesy and drill are given, and the privileges and obligations of a member of the army are set down. The book is particularly well written and useful in the portions which discuss the men whom the recruit will meet ("Your Team-Mates"), the reasons for military courtesy and the general attitude which should be taken toward the service. It is along these intangible lines that a recruit may find his greatest difficulties in adjustment, and the treatment of the problems in this book is excellent.

An appendix to the book, in three parts, furnishes a brief list of military ranks and duties, the more common bugle calls and a list of other useful books on military subjects.

It should be a considerable comfort to a youth, stepping into the induction station, to know that he may carry with him, in his hip pocket, a book of friendly advice from an experienced and able officer. M. L. Goldman.

Science and Seizures

By William G. Lennox, M.D. Cloth. Price, $2. Pp. 258. Illustrated. New York: Harper & Brothers, 1941.

This is an important new book on a subject which is badly in need of clarifying in the public mind. Few diseases today offer as much opportunity as epilepsy to the quack and the commercial exploiter. This is largely because most persons know nothing about epilepsy, except that it is a disease characterized by convulsions. Most persons regard all cases of epilepsy as incurable and inevitably destined to become feebleminded, incapable of supporting themselves and unfit to marry and become parents.

These popular conceptions are true in a certain measure and in certain cases, but there are notable exceptions. This book comes as a restrained, scientific, conservative, accurate and yet optimistic antidote to popular misconceptions. It should bring new hope to thousands of epileptics, their families and their friends.

The inclusion of migraine as sort of "cousin" to epilepsy will be a new and perhaps shocking thought to many readers. In putting forth this relationship, the author lists likenesses and differences in epilepsy and migraine. He does not claim an established relationship but indicates the evidence for and against such a relationship.

The fascinating subject of brain waves or electroencephalography and its present and future possibilities is clearly elucidated. Emphasis is placed on the fact that treatment of epilepsy is not only medicinal but psychologic, social, and physical.

A campaign of education about epilepsy is visualized through the Layman's League against Epilepsy, whose office is at 25 Shattuck Street, Boston. This League is much like the American Society for the Hard of Hearing, though by no means so well organized or developed. Its membership consists of sufferers from epilepsy and their relatives, friends and sympathizers and their doctors. A magazine called "Epilepsia" is published by the League.

Adhering strictly to the scientific facts and making no promises that cannot be fulfilled, this book succeeds nevertheless in giving hope to the epileptic and should, therefore, be not only useful but encouraging. W. W. Bauer, M.D.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through Hygeia or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

Harper & Brothers, 49 E. 33rd St., New York City

National Tuberculosis Association, 50 W. 50th St., New York City.

Simon & Shuster, Inc., Rockefeller Center, 1230 Sixth Ave., New York City.

By the Skin of Their Teeth

(Continued from page 538)

minutes; from fourth grade to the sixth, for 15 to 18 minutes. Special educational material designed for school children and produced, either by the school or by professional puppeteers, is presented. The "Little Jack Puppet Show," produced by the Good Teeth Council of Chicago, has been a definite attraction in many schools. Also, suitable educational literature such as "Jimmy Chew Booklets," "ABC Booklets," "Good Teeth for All Ages" and "Mother Goose" have pleased thousands of children and kindled their desire to take care of their teeth. By the use of these devices, within less than two years the percentage of dental defects among elementary school children in Washington dropped from 78.3 per cent to 69.1 per cent.

A percentage tabulation of dental defects among elementary schools of comparable cities in the United States reads as follows: Philadelphia, 98; Chicago, 96; New York, 96; Cincinnati, 95; Los Angeles, 90; Milwaukee, 90; Cleveland, 80; St. Louis, 80; Baltimore, 75; Detroit, 71; Washington, 69.1.

The patient, apparently, isn't the only one who suffers in the dentist's office. Persons who haven't realized the difficulties of the dental physician in treating some children may become enlightened by reading the special advice offered for definite situations.

If the dentist is baffled by a recalcitrant youngster, he can turn to the proper section under "Management of the Child Patient" and learn that the "timid or bashful type," who hides his face behind his mother's skirt, should be called by his first name and talked to about his hobby, granting, of course, such information can be obtained.

Then there is the "spoiled or incorrigible" type, who has to be dragged into the office and who whines, fights, kicks, bites and screams. The mother will probably say fondly, "Johnny, all the doctor wants to do is see your teeth, and if you will be a good boy I'll buy you an icecream cone or anything you want." This type presents a particular problem to the perspiring dentist. He knows full well that Johnny in all probability has everything he wants anyway, or knows he can get it without having work done in a dental office. After the child is given every opportunity to be good, the mother is requested to leave, and with the help of nurses, the dentist carries on.

When confronted with the "defiant type"—usually a boy—who firmly closes his mouth and refuses to open it, all that is necessary is to obtain the confidence of the parent and then to see little Henry alone for a few minutes. He is the bully or the "big shot" in his schoolroom but he learns that he is just another boy in the dental office. As soon as he discovers that the dentist is master of the situation, little Henry will create no more difficulty because he is always the type who "can take it." By covering the child's mouth and nose for ten or fifteen seconds, the dentist, from then on, usually has perfect control over the patient. The sick child, of course, receives every consideration. With great patience, he is given temporary relief from pain, and all operative work is left for a future appointment.

The fact that there are not sufficient dentists in the United States to supply all the necessary dental service, even if there were a demand for it, and that the public is able to pay for dental work is not known generally. There are approximately 69,000 dentists, 50,000 of whom are members of the American Dental Association. In relation to the population, the number of dentists is decreasing in this country at the rate of 2,400 each year. Fewer than 1,600 trained practitioners will be graduated from dental schools this year.

Despite these figures, there is ample proof that dental health programs which emphasize prevention of tooth defects through education, and supply corrective aid for those unable to pay, can markedly improve the existing situation. By bringing to light the colossal need for dental service, the Selective Service Act has rendered America an invaluable benefit.

New *under-arm*
Cream Deodorant
safely
Stops Perspiration

1. Does not harm dresses—does not irritate skin.
2. No waiting to dry. Can be used right after shaving.
3. Promptly stops perspiration for 1 to 3 days. Removes odor from perspiration.
4. A pure, white, greaseless, stainless vanishing cream.
5. Arrid has been awarded the Approval Seal of the American Institute of Laundering for being harmless to fabric.

Arrid is the LARGEST SELLING DEODORANT. . . Try a jar today.

ARRID

39¢ a jar

AT ALL STORES WHICH SELL TOILET GOODS
(Also in 10 cent and 59 cent jars)

SUMMER COMPLAINT
12 pages by W. McKim Marriott 10 cents
AMERICAN MEDICAL ASSN.
535 N. Dearborn St., Chicago

Thumb-Sucking
PREVENTED
Simply apply BITE-X to thumbs or finger tips. It instantly forms a tough transparent unpalatable coating. Also stops nail biting. Contains Aloin, 3.1%—Resin, 1.5% in a collodion base. Approved by child specialists. Send for free booklet.
Satisfactory Results or Money Refunded
MAIL $1.00 to Dept. H-155
CHILD WELFARE GUILD, 386 4th Ave., N.Y.

Barrie would have none of it. He clamored for his familiar bottle.

PSYCHOLOGY

Soon babies may be receiving psychologic care from birth, just as they are now receiving medical care from birth, not because it is fashionable but because it returns big dividends

By AUGUSTA ALPERT

RUMOR HAS IT that in Hollywood it is chic to be psychoanalyzed. "Lady in the Dark" will probably set the same mode for the elite of Broadway. But the psychoanalyst can be counted on to writhe at this vulgarization of his so delicate technic. Reams of scientific monographs over decades have not been able to remove the stigma which clings to psychology, but Fashion may effect the change in a season and painlessly. If Fashion is destined to be the promoter of psychology, more power to it!

Under the sponsorship of Fashion, psychology may even be prescribed for wretched adolescents, at least when plastic surgery cannot improve on nature. The noses which undergo remodeling when emotions require it defy counting. If travel continues to be restricted "for the duration," fashionable, chronic patients may resort to psychology instead of a trip abroad for a change of scene, or a cure at a spa. Soon babies will be crying for it—and getting it.

Babies will receive psychologic care from birth, just as they now receive medical care from birth, not only because it will be fashionable, but because it pays. No matter how frivolously their parents may have undertaken their own psychoanalysis, they will come out of it convinced that in mental health an ounce of prevention is worth ten pounds of cure. Prophylactic psychology can do as much in raising the level of mental health as prophylactic medicine has already done in raising the level of physical health.

There are those who are contemptuous of fads and fashions, and remain skeptical of the notion that babies have a mental and emotional life which is susceptible to injury. They demand proof and they are entitled to it. Here are life histories of three such typical children:

Barrie was an eagerly awaited baby because his parents had lost their first child and felt utterly bereaved until the second baby was born. Both parents, especially the mother, were eager to prove that they could do a superior job of

She insisted that she was a boy, absolutely refusing feminine toys.

À LA MODE

rearing their children. Inability to nurse her child made the mother even more conscientious, and she was inclined "to go by the book" somewhat too energetically and too literally. Thus, because "the book" advised that babies be weaned from the bottle at 6 months, Barrie got his milk from a glass at 6 months to the day. But Barrie would have none of it. He clamored for his familiar and beloved bottle and refused to drink from the unknown. Mother was as determined to obey "the book" as baby was determined to have his bottle. This tug of war went on all day until father came home. He lined up with mother and "the book" against baby, and still the half-year-old held out. After a hunger strike of eighteen hours, Barrie capitulated. That day it was recorded in his diary that at 6 months and 1 day baby began to drink from a glass. Some babies are like elephants—they never forget. Though Barrie henceforth drank meekly from a glass and continued to thrive physically, he began to suck his thumb. The parents once more girded their loins for war and another strenuous campaign was waged against thumb-sucking. Adhesive tape, gauze mitts and elbow cuffs were the familiar implements of war. After another bitter struggle (which "hurt me more than the baby," said the mother), the parents again seemed to win, but again Barrie did not forget. He was then observed to suck on his cheeks and lips and to bite his nails; also he became generally negativistic. By the time he was 4, he was considered unmanageable, and a psychologist was appealed to as the master strategist.

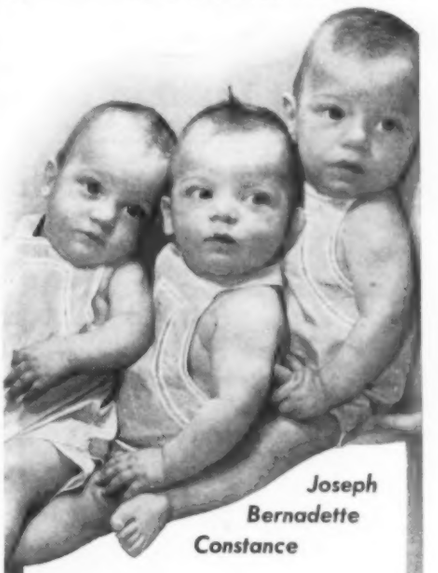
Barrie's parents are among the best there are. Nothing was too good for their child, but their concept of babies was incomplete. They thought only in terms of formulas, height and weight tables, health routines and habit-training. Everything went smoothly as long as the baby's feeling and preferences coincided with theirs and did not need to be reckoned with. When he began to assert himself as a personality, they saw him only as interfering with their program for a model baby. If life had not made them too anxious for perfection, they would have thought of easing their baby over changes in routine such as weaning, and of enlisting his cooperation. Fortunately, awareness of their own limitations dawned on them when Barrie was still young. They were honest enough to admit to themselves and to each other that, "If we can't manage a child of 4, there must be something wrong with our methods." Most parents never reach this stage of enlightenment. Abrasive tugs-of-war between inflexible, overanxious parents and their children continue until they become docile replicas of their parents, or chronic rebels, or worse.

Marie was the first-born, warmly welcomed by her mother, but only indifferently so by the father, who had been looking forward to a son, to whom he could, in time, hand over his business. Little Marie throve during her infancy in spite of her father's rejection. At 18 months an attack of pyelitis came and went unimpressively, but shortly thereafter the parents were shocked to discover their daughter masturbating. An all-knowing relative confidently advised spanking, which appealed to the parents as a good, common-sense remedy and they applied it dilligently for a year. At the age of 2½ Marie became a proper little girl again and all was forgiven and forgotten. But not by Marie! Soon she began to behave like a boy, dressing up in her father's clothes, using the toilet like a boy, insisting that she was a boy and absolutely refusing to play with dolls and other feminine toys. The more her father neg-

"The triplets have never had diaper rash"

says

Mrs. Amelia Ambrose



Joseph
Bernadette
Constance

"Part of the credit goes to gentle New Quick LUX"

"The triplets were such little mites at birth, I've always given them special care . . . I use Lux for all their clothes.

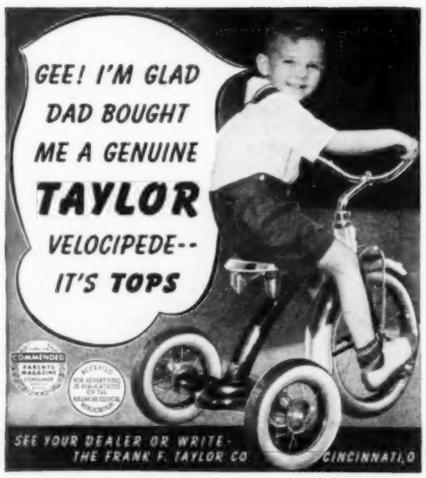
"They've never had diaper rash and I say part of the credit goes to new, quick Lux. It's so gentle—leaves bands and diapers soft and smooth.

"Dresses stay bright, sweaters fluffy with this care. Luxed hand-me-downs from my other three still look lovely."

New, quick Lux contains no harmful alkali . . . nothing to irritate tender skin. Suds fast and is so thrifty! In the same familiar box, costs no more.

New Quick LUX

For all your baby's things



For the Overweight

OBESITY—Campaign Against Corpulence, Food After Forty, Waist-Lines and Life-Lines, Some Obesity "Cures" and Treatments. **48 pages.. 15 cents**

For the Underweight

HOW TO GAIN WEIGHT

8 pages. 10 cents — Advice by LAURA A. MILLER on two workable ways of putting on pounds.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago

SEE MODERN-MOTHER
Then Use Your Own Judgment

MODERN-MOTHER Nursing Brassiere has interchangeable sterilized pads to absorb all seepage of milk. Prevents sour odor and possible infection.

Not a clumsy garment, but a light weight uplift brassiere. Adjustable shoulder straps.

Bandeau Style, No. 628, for slender figures in sizes 32 to 38. Sold at $1.50.

No. 623 with elastic insert and wider support, $2.00. In sizes 32 to 44.

Maternity Brassiere, No. 627, has adjustable back section for increasing development during pregnancy. $2.50. Sizes 32 to 44.

Compare MODERN-MOTHER Nursing Brassiere before accepting a substitute.

If your dealer cannot supply you, write Dept. H

VENUS CORPORATION
1170 Broadway, New York, N. Y.
Branch: 424 S. Broadway, Los Angeles, Calif.

lected her and the more brusquely he put her in her place as a girl, the more frantically Marie strove for his attentions. She grew up to be a remarkably ambitious girl, but as ruthless as she was ambitious. She showed a withering contempt for her mother, her younger sister and for most women. Those women who had arrived at the top, she emulated passionately. Succeeding admirably at everything she attempted, she drove herself relentlessly, seething within and periodically exploding into violent tantrums. These emotions came to a head at puberty, and when she became 15 both parents were sufficiently frightened to seek the advice of a psychologist.

Marie's case is less typical and more complex than Barrie's, but the "moral" is the same. Babies have feelings which can be hurt; when their feelings are hurt they become unhappy and seek consolation, much as adults do. Masturbation and thumb-sucking are pleasurable activities which soothe the child's ruffled feelings, no matter how offensive they may be to the parent. The child will give them up when a sense of well-being and other gratifications, such as parental love, make consolation unnecessary. Spanking or elbow-guards can hardly be accepted as substitute pleasures by any child with sense. After a more or less severe struggle most children will yield to punishment, as both Barrie and Marie did, but the victory for the parents is usually a Pyrrhic one. They almost always pay heavily for it in one way or another. If parents do not know how to cope with masturbation without resorting to physical force, the most sensible thing they can do is to ignore it. But most parents are so constituted that they cannot ignore it. Their best bet, then, is consultation with a psychologically minded pediatrician or with a psychologist. But even a psychologist cannot change a father's strong preference for boys, which he derived from some fixating experiences in his own childhood. However, his expression of this preference could have been lessened so that his daughter would not sense it so deeply, nor so early in life. The older a child grows the more resources she has to cope with painful experiences and the less she is hurt by them. How touching are Marie's attempts to live up to her father's expectations, first by pretending she is a boy and then by striving to be a superwoman. Through contempt and defiance Marie is unconsciously paying her mother back for letting her down when she needed her most. The pyelitis focussed the child's attention on vaginal sensations and in the setting of emotional insecurity, masturbation was

Although her body grew normally, she stayed emotionally infantile.

a natural result. More than ever she needed the reassurance of her mother's love. Instead she got spankings and scoldings, which, together with her father's rejection, left an indelible impression on her character and personality.

Betty started life as a frail, incubator baby who was not expected to survive. But through the painstaking care of pediatrician and parents she emerged from the incubator alive and kicking. At 2 years of age she was pronounced a normal little girl, measuring up to height and weight standards. But she continued to live in a sort of emotional incubator, constructed of the mother's exaggerated anxiety and solicitude. Thus, while her body grew to be 3, 4 and 5 years old, emotionally she remained dependent in an infantile way. Chronologically, she was ready for kindergarten, but in behavior and attitude she was still at nursery school level. She continued to use baby-talk, was clumsy in physical activity and clung to adults. Her parents were afraid that their daughter would be humiliated in kindergarten so they kept her home until she was past 6. Finally they enrolled her in school, hoping desperately that she would get along. In the first grade, unsuspecting little Betty began her career as a misfit. For a half year, she was considered dull, freakish and a nuisance. The parents could not take another term of it; they rushed Betty off to a psychologist with the question, "Is she normal?"

The psychologic examination indicated that Betty was indeed normal in capacity. On the verge of tears, the mother gathered what consolation she could from the explanation that functionally—in speech, in manipulative skills, in social experience—her daughter was a 4 year old, but that potentially she was a normal girl. When a child's life is lived for him he does not get a chance to exercise his mind and body. When he is shielded from the everyday tasks of life, he does not develop normally: he behaves like a handicapped child. A re-educational program, for such children, carefully planned and conscientiously applied, usually gives excellent results. The earlier such a program is started, the more promising the results.

Eventually, a collaboration between pediatrics and psychology will work out a prophylactic program for babies as total personalities in both mind and body. Future Maries, Barries, Bettys and their parents will be spared emotional wear and tear, which so often distort personality and lower efficiency, if they do no worse. Such a preventive program may bring the human race within reach of the ideal, "A sound mind in a sound body." Psychology will then become fashionable, not in a snobbish sense, but in a truly democratic sense.

MENTAL DISORDERS OF AGED AMENABLE TO TREATMENT

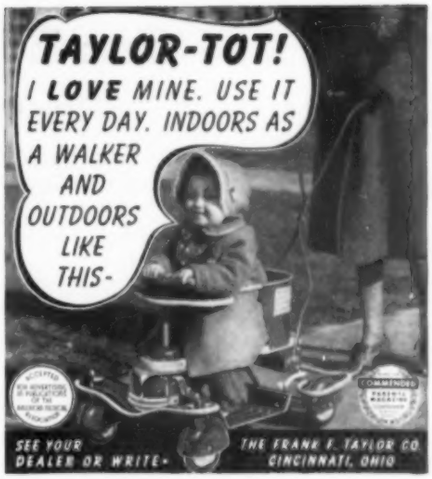
The mental disorders of the aged are as amenable to treatment as those younger patients, G. Wilse Robinson Jr., Kansas City, Mo., declares in *The Journal of the American Medical Association.*

"Geriatrics," he says, "is the science of the treatment of diseases of old age. In the days of straight pathologic [caused by disease] interpretation, this branch of medicine was neglected almost entirely because of the belief that arteriosclerosis [hardening of the arteries] and/or senile atrophy [the wasting due to old age] were the sole causes of the presented symptoms."

He points out that the most distressing developments of old age are the mental symptoms and that if these are interpreted as straight pathologic developments they are all hopeless and every person over 60 acquiring them should be confined immediately to an institution and considered to be in need of custody and protection for life.

"In recent years," he declares, "study and observation on these conditions have shown that a straight pathologic interpretation in these cases should not be made. The classic statement 'a man is as old as his arteries' is, of course, still true, but 'old age' and 'senile dementia' [insanity of old age] are not synonymous."

In confirmation of this concept he cites the results obtained in the treatment of 50 patients over 60 years of age with such mental conditions. Thirty-five of them, or 70 per cent of the total, recovered sufficiently to return home.


TAYLOR-TOT!
I LOVE MINE. USE IT EVERY DAY. INDOORS AS A WALKER AND OUTDOORS LIKE THIS-
SEE YOUR DEALER OR WRITE-
THE FRANK F. TAYLOR CO. CINCINNATI, OHIO

THUMB SUCKING

Children who repeatedly suck their thumbs and bite their nails run the risk of transporting germs, dirt, grit and other foreign matter into their mouths and throats. This habit is not only unhealthful but very unbecoming to any child.

THUM

. . . contains extract of capsicum (2.34%) in a base of acetone nail lacquer and isopropyl alcohol. Applied like nail polish.

50c and $1 per bottle at your druggist.

ACCEPTED AMERICAN MEDICAL ASSN

H-7-41

NAIL BITING

bad habits IN GOOD BABIES

16 PAGES
15 CENTS

Covers "a multitude of sins." Illustrated.
AMERICAN MEDICAL ASSN
535 N. Dearborn Chicago.

The Ideal "Birth Gift"

TEETERBABE Baby Chair! Solves the "birth gift" problem. Gives baby gentle exercise. Keeps baby entertained, contented and happy. Lightens the burden of baby care. Used indoors, outdoors and as auto seat. Hundreds of thousands sold. At dealers everywhere. Circular on request.

NATIONAL PRODUCTION CO.
4563 St. Jean Ave. Detroit, Mich.

Sex Education

(*Continued from page 528*)

The exchange of nourishment and respiratory oxygen during embryonic life through filtration from the placenta from the mother's blood stream, much as a tree gets nutritive substance by absorption from the soil through its roots, should be explained. When this is understood it becomes clear how well the unborn child is guarded in the uterus, and people will no longer be troubled by the superstition that upsets or events which frighten the mother can "mark" the child. All this can be taught much more readily from specimens than from books or pictures. Every one should urge his local medical center to set up demonstrations of human development to which the children can go with their parents or teachers. This is one of the best ways by which a county medical society can render an educational service to the community.

Sex Problems of Girls

Puberty sets in a little earlier in girls than in boys. The usual age at first menstruation is 13½ years, but any age from 11 to 16 is normal. The mother of the girl of 11 should explain the nature of menstruation to her daughter so that when it first occurs the girl will know what to expect and will not suffer a psychic shock. The mother can point out that about every four weeks there is a bleeding from the uterus, lasting a few days, which is called menstruation. In this description, the fact that it is a normal process should be stressed. Girls should not be told to expect menstrual pain, headaches, or nervousness as a matter of course. At the same time, if disorders such as painful, irregular and excessive menstruation do occur, the girl should have competent medical care and advice. During the first two or three years after the onset of menstruation, some irregularity is frequent. There may be intervals of two, three or more months between the first few periods. If menstruation has not begun at all by the age of 16, a physician should be consulted.

Sexual self-excitement by one means or another may be tried out by girls or young women and the problems of self-control are as pertinent for girls as for boys. When masturbation is excessively frequent, or when it leads to over-seclusiveness or morbid daydreaming, the wise parent will seek medical advice and treatment for the child.

Another problem is that of over-intense friendships or "crushes" with other girls. The adolescent girl naturally needs a close and confidential friend or two outside the family, with whom to discuss the many new interests that are arising in her life. When this need for friendship is combined with the sexual urges that are developing at the same time, the combination may lead to over-wrought, over-intense relationships with strongly romantic and even sexual aspects. Sometimes the violent affection is not directed to a girl of the same age, but to an older girl or a teacher. These "crushes" are transitory and generally fade out without harm. They may at times, however, give rise to dangerous emotional strain, or even to homosexual relations. Parents whose girl gets involved in a "crush" of the more serious type have a difficult task, requiring all the tact they possess, for they must attack the problem by providing other interests and emotional outlets for their daughter, and not by direct interference.

Sex Problems of Boys

A boy's problems of personal sex conduct become increasingly important from the time of puberty onward. Many of these problems he does not discuss with his parents, so that his behavior will be determined by outside sources, some wise, some ignorant. A most immediate problem at the time of puberty is that of masturbation. Every boy discovers for himself that handling his genital organs sets up sexual sensations and excitement, and every boy and man is subject to episodes of this sort. Modern physicians know that the bad effects of masturbation have been greatly exaggerated in the past. Many a boy has been frightened almost out of his wits through hearing from a friend, or reading in quack literature that "self-abuse" will weaken his health or cause some dire illness. Parents, too, have often worried unnecessarily on this subject and by "preaching" to their son have exaggerated the importance of the actual occurrence until a real emotional complex is set up in the child.

This is not meant to encourage or approve a habit of self-excitement. Boys should be counseled that those who wish to lead effective lives, in work and play, cannot afford to yield to every temptation. Excessive masturbation, with its tendency to daydreaming and withdrawal from reality, can be harmful. It calls not for moralizing or exhortation, but for a careful study by a physician who understands behavior problems. Occasional masturbation, however, is not a cause for alarm.

Seminal emissions which begin at puberty constitute another phenomenon that has been exploited by advertising quacks. This generally occurs at night and is accompanied by sexual dreams. Under the false name "nocturnal pollutions" these normal events have been given a bad name, especially by people who have quack medicines to sell. They are not a cause for worry unless frequent, in which case a doctor should be consulted.

Sex Conduct

When the general anatomy and functions of the reproductive system are understood by the adolescent boy or girl, it should be easier to deal with the problems of sex conduct. The boys and girls will at least know correctly the nature of human mating, its purpose and its consequences.

One of two general but different attitudes is usually followed by parents in dealing with advice on sex behavior and conduct of their children. They may adopt the time-honored, moralistic attitude, or they may adopt a direct realistic approach to the problem.

If the parents follow a moralistic attitude, then their behavior and the advantages of the good home should lead their children to realize for themselves that human sex is not only a matter of animal nature, but involves a whole range of high and beautiful relationships. Each young man and woman has

to solve for himself and herself the problem which nature has set for us all by giving mankind an animal body with a mind and heart as well. The example and indirect guidance of the parents is of greater value than any specific education. The adolescent must, of course, know something about the things that can go wrong with human sex conduct, and how to avoid them. They must get somewhere—at home or from a competent source outside, such as a teacher or scout leader, or from one of the booklets written for young people—a clear discussion of the questions of "petting."

If the parents have an attitude toward life which is one of direct realism, then their advice to their adolescent children will undoubtedly be based upon an open consideration of the causes and consequences of the various problems arising during adolescence. They will be able to point out to their children the biologic basis of the instinctive drives toward relations with others of the opposite sex and to tell them to regard these drives as natural occurrences which must be kept in control. Such parents will realize that strong interest in the opposite sex is a healthy sign of development of the personality, and they will understand that a certain amount of practical experimentation of the sort commonly known as "petting" is practically inevitable. Instead of becoming helplessly alarmed about this, they will point out to their sons and daughters the necessity of balancing their emotional urges by intelligent control of their conduct. The problem of early marriage can be analyzed and the economic difficulties pointed out. The necessity of mutual fairness and consideration in love can be discussed so that the adolescent in the throes of first love will understand the real problems involved and hence be able to control these emotional drives before they lead to overwhelming consequences.

Whichever attitude is taken, moralistic or realistic, the possibility of an unwanted pregnancy resulting from sexual experiments must be plainly stated to the youth of high school age. No parent, however confident he may be of the wisdom and discretion of his child, can afford the risk of hearing, after the event has occurred, the accusation "You never explained these things to me or gave me a chance to discuss these things with you."

Most parents will not, and probably should not, sit down with their children and give them in formal talks the facts sketched here. Many parents will find it easier and more effective to present the fundamentals by placing a suitable booklet in the hands of the children. Actually, the best contribution the average parent can make to the sex education of his child is to see that the boys and girls are properly taught the elements of biology and hygiene, preferably in school. The wise parents will inform themselves on matters of sex education so that they will be ready to answer questions, help solve problems, and above all to give a constant example of a well-instructed, decent, sensible attitude toward all the problems of life, which never seem more vital than they do at the age of adolescence.

Suggested Readings

"From Boy to Man": For boys of high school age, by N. W. Edson. Pamphlet. Price, 10 cents. American Social Hygiene Association, 450 7th Avenue, New York City.

"How Life Goes On and On": For girls of high school age, by Thurman B. Rice. Pamphlet. Price, 25 cents. American Medical Association, 535 N. Dearborn St., Chicago.

"The Sex Side of Life": An explanation for young people (brief and plain-spoken), by M. W. Dennett. Price, 25 cents, from the author, 24-20 29th St., Astoria, L. I., N. Y.

"Attaining Manhood": For boys of 12 to 16, by G. W. Corner. Cloth. Price, $1.25. New York: Harper and Brothers.

"Attaining Womanhood": For girls of 15 to 18, by G. W. Corner. Cloth. Price, $1.25. New York: Harper and Brothers.

"Love at the Threshold"; For boys and girls of 16 to 21, by Frances Bruce Strain. Cloth. Price, $2.25. New York: D. Appleton Century Co.

"Love in the Making": A common-sense view of the relations between young men and young

Bellin's Wonderstoen

ODORLESS DRY METHOD

HAIR ERASER

● Bellin's Wonderstoen hair eraser has been on the market for over 30 years. Women, bothered by unsightly hair on face, arms or legs, have found Wonderstoen to be an ever-welcome safe, dependable hair eraser.

Bellin's Wonderstoen is free from sulphides, corrosives or injurious chemicals.

It can be used just as safely on the face, as on the arms and legs.

Free on Request—
Fascinating Booklet X

WONDERSTOEN for Arms and Legs . $3.00
WONDERSTOEN for the Face 1.25

On Sale at
Department and Drug Stores

BELLIN'S WONDERSTOEN CO.
1140 Broadway, New York City

SEX EDUCATION BOOKLETS

By Thurman B. Rice, M.D.

★ THOSE FIRST SEX QUESTIONS
For parents of little children. Wholesome home life, character training and honest, accurate answers to children's first sex questions are fundamental in successful sex education.

★ THE STORY OF LIFE
For boys and girls, ten years of age, telling them how the young come to plants, animals, and human parents.

★ IN TRAINING
For boys of high school age, interpreting their adolescent development in terms of athletic and other achievements which they can understand.

★ HOW LIFE GOES ON
For girls of high school age, explaining how they are to be mothers of the men of tomorrow.

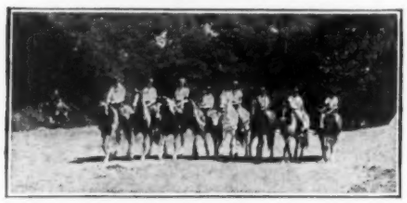
★ THE AGE OF ROMANCE
For young men and women, dealing with the problem as a unit for both sexes.

Quantity Prices
5 to 50 copies, assorted, 20 cents each
51 to 100 copies, assorted, 16 cents each
101 to 500 copies, assorted, 14 cents each
(Remittance in full must accompany order)

Complete set of 5 in filing case $1.00

AMERICAN MEDICAL ASSOCIATION
531 No. Dearborn St. Chicago

Schools and Camps



Has your child heart trouble, asthma, diabetes, nephritis?
He may lead a normal life, grow strong and learn in the sunshine at

La Loma Feliz
SANTA BARBARA, CALIFORNIA
Ina M. Richter, Med. Dir.
John A. Robinson, Senior Master.

Schools and Camps for Exceptional Children

FAIRFIELD HALL

A school for the Correction of Speech Defects such as stammering, stuttering, lisping, cleft-palate, foreign accent; voice disorders and speech development. For children and adults. Resident and day school. Monthly registration. Write for booklet.

Wm. R. VAN LOAN, Director
100 Strawberry Hill Stamford, Conn.

Beverly Farm, Inc. Home and school for nervous and backward children and adults. Successful, social and educational adjustments. Occupational therapy. Dept. for birth injury cases. Healthfully situated on 220-acre tract, 1 hr. from St. Louis. 7 well-equipped buildings, gymnasium. 43rd year. Catalog. Groves Blake Smith, M.D., Supt., Box H, Godfrey, Ill.

THE MARY E. POGUE SCHOOL For Exceptional Children.
DOCTORS: You may continue to supervise the treatment and care of children you place in our school. Catalogue on request.
80 Geneva Road, Wheaton, Illinois — Telephone Wheaton 66

● TROWBRIDGE TRAINING SCHOOL ●
Home school for nervous, backward children. "*Best in the West.*" Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrollment limited. Endorsed by physicians, educators. Booklet E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

PLAY FAIR
WITH YOURSELF ● KNOW THE **RULES OF THE GAME** ●
● By JESSE WILLIAMS ● Outdoor Air ● Wholesome Food ● Intelligent Care of the Body ● Rest and Sleep ● Thinking Straight ● Exercise ● Table of Heights and Weights for Adults ● FIFTEEN CENTS ● ● ● AMERICAN MEDICAL ASSOCIATION ● 535 N. Dearborn St., Chicago ● Illinois ●

women, by Newell W. Edson. Pamphlet. Price, 10 cents. American Social Hygiene Association, 370 7th Avenue, New York City.

"The Science of Human Reproduction": Written at college level, by H. M. Parshley. Cloth. Price, $2.50. New York: W. W. Norton & Co.

"The Woman Asks the Doctor": On medical problems, for mothers and older girls, by Emil Novak. Cloth. Price, $1.50. Baltimore: Williams and Wilkins.

Pathways of Medical Discovery

(Continued from page 555)

Landsteiner of the Rockefeller Institute. By studying human blood, he demonstrated that it was of different types and that successful transfusions demanded blood of the same type be given from one person to another. Through this contribution, he helped to make the procedure of human transfusion a safe, often life-saving affair generally used the world over.

Within the last few years the same question that bothered Dr. La Terrière's Parisian friend once more has come alive. Many doctors again have asked whether animal blood in some form cannot be found that may be used for purposes of transfusion. Not long ago the successful administration of large quantities of blood serum obtained from an animal to a human patient who needed this substance was described. This experiment was in line with recently developed knowledge which reveals that in many instances the serum or plasma of the blood is more important for transfusion than is the coloring matter which makes blood look red. Much work has been done toward successfully drying human plasma or serum and later dissolving it in water for transfusion purposes. Perhaps the time is not too far distant when animal blood, properly treated and dried, can be used in this fashion, thus attaining a goal long sought by many investigators.

The Nobel prize in medicine of 1934 was awarded to Dr. George R. Minot and Dr. William P. Murphy of Boston and to Dr. George H. Whipple of Rochester, N. Y., for their development of the liver treatment of pernicious anemia. This discovery ranks with that of insulin, showing how curability can be possible for any chronic illness which through want of knowledge in any one period of time may appear to be hopeless.

Pernicious anemia, like diabetes, for many years appeared to be an untreatable malady. It was the kind of disease that teachers liked to demonstrate to students because it was so interesting—a disease which caused the blood to turn to water and made people grow weak and yellow in color. Valid scientific treatment was unknown. A few patients improved with rest, fresh air and good food, but most of them continued to grow weaker until they died. Then, Minot, Murphy and Whipple discovered that liver contained something in it which the patient with pernicious anemia lacked. They also found that if this substance was supplied blood was formed normally and the patient grew well. Now pernicious anemia, like diabetes, a disease hopeless for centuries, suddenly becomes a burden of no particular hardship for any one to bear.

The ability to determine the cause of a disease and, knowing this, to eradicate it, has always been an impressive milestone on the pathway of medical discovery. At times, however, it may be impossible to eradicate the cause of a serious infectious disease although it may be possible to devise methods for emasculating it. From this point of view the 1939 Nobel prize award in medicine to Dr. Gerhard Domagk of Wuppertal, Germany, is significant. Domagk was the first clinician to describe the use of a sulfonamide derivative, thus opening a new and absorbing chapter in the history of medical treatment.

Homologues of sulfanilamide are becoming a large family with a wide variety of names. Their underlying principle, however, is to permit the introduction of chemi-

cal substances into the body as a result of which bacteria, when they are present and ordinarily able to multiply and cause disease, cannot grow. No one knows how far this general principle can be developed, but already, in a very short space of time, it has caused striking results.

The effect of sulfonamide derivatives on pneumonia affords an excellent example of what in the future may happen to a variety of other serious infections. When there was no particular treatment for pneumonia, there was a fairly steady mortality from the disease. When serum became usable—due fundamentally to the work of Prof. Adolf von Behring of Marburg who received the Nobel prize in 1901 for discovering diphtheria antitoxin—the pneumonia mortality was lessened. But the striking drop in pneumonia mortality which has appeared in the last three years must be credited largely to the sulfanilamide family. The chemical treatment of infectious disease promises almost incredible developments in the future.

Although medical research has contributed variedly to the welfare of society, too much emphasis cannot be placed on this aspect of medical progress. Medical research is a time-consuming, arduous, expensive process. If society wishes medical research to be performed for its own good, and if additional milestones are desirable, society the world over must be willing to help generously with financial endowment. Society, too, must be prepared to help in another way. Society must be willing to cooperate with doctors in their work and must follow the leadership of doctors and their highly trained opinion.

The story of appendicitis in Massachusetts presents a lucid illustration. Appendicitis was first described in 1886 as a disease easily recognizable. There appeared to be two appropriate lines of treatment: by operation, in which case this should be done as early in the disease as possible; or not by operation, in which case the first and only thought of the physician in charge of a patient must be to leave the bowels alone and at complete rest.

In the early days of the operative treatment of appendicitis, the mortality rate was high. As time went on, surgeons became extraordinarily skilful and the operative mortality in any large group of cases of appendicitis became notably small. In spite of an increasing ability to recognize appendicitis early and to treat it by surgery with a diminishing hazard, the total number of fatal cases increased year by year. The peak in Massachusetts was reached in 1933 when there were 623 deaths.

Both surgeons and doctors realized the increasing menace of this relatively simple disease. The surgeons blamed the doctors: they said that doctors were too slow in recognizing early cases. The doctors denied this accusation, replying that their patients were treating themselves before they called for medical help. The proper, nonoperative treatment of appendicitis was firmly established as being no more than to leave the bowels alone and at complete rest. Yet patients, at the first hint of the warning stomach-ache so likely to usher in an attack of appendicitis, were rushing off to the drug store and, without medical advice, were treating themselves with castor oil, salts and other laxatives. Obviously, this was improper treatment and the cause of many fatal cases.

An anti-laxative campaign was started. Sermons on the danger of laxatives were preached to medical students, doctors, nurses and to public audiences interested in learning something of modern medicine. It begins to look as though the weapon of public education, forged and sharpened in this manner, would be effective. At least, in Massachusetts, appendicitis was no more of a menace in 1939 than it was in 1918 when laxatives and bowel movements were discussed in public with less reticence than they are today.

Medicine is a fascinating and important subject. Its knowledge must advance. Milestones of medical discovery must continue to be placed along the pathway of the world as time marches on. Society must help to make the road as smooth as possible for an improving public health. This can best be accomplished by endowments and sympathy for medical research and by intelligent cooperation from patients with their family doctor in his efforts to supply them with all that is known of treatment for sickness when it develops.

INDEX
to HYGEIA
ADVERTISEMENTS

Ade-O-Matic Company 568
American Institute of Baking 567
American Meat Institute 563
Armand Company ..... 2nd Cover
Artra Cosmetics (Sutra) 559
Bellin's Wonderstoen Company 589
Beverly Farm, Inc 590
Carter Products, Inc 583
Child Welfare Guild 583
Church & Dwight Company, Inc 573
Church Grape Juice Company 570
Duke Laboratories, Inc 576
Fairfield Hall 590
General Foods Corporation (Post's 40% Bran Flakes) 569
General Mills, Inc ..... 3rd Cover
Hansen's, Chris, Laboratory, Inc 566
Hawaiian Pineapple Company, Inc 565
Hynson, Westcott & Dunning ..... Back Cover
Iodine Educational Bureau, Inc 577
La Loma Feliz 590
Lever Brothers Company (New Quick Lux) 585
Luzier's, Inc. 575
Marcelle Hypo-Allergenic Cosmetics 518
Mead Johnson & Company 513
Metropolitan Life Insurance Company 560
National Production Company (Teeterbabe) 587
Nonspi Company 574
Num Specialty Company 587
Personal Products Corporation (Meds) 572
Phillips, Dr. P., Company 570
Pogue, Mary E., School 590
Soft-Lite Lens Company 519
Squibb, E. R., & Sons 515
Sun-Rayed Company 570
Takamine Corporation 576
Tampax, Incorporated 579
Taylor, Frank F., Company 586
Taylor-Tots 587
Velocipedes 586
Tre-Zur Brassiere Company 574
Trowbridge Training School 590
Van Camp Sea Food Co., Inc 570
Venus Corporation 586

FREE
BOOKLETS

and attractive offers of samples are featured in many of the Hygeia advertisements. Remember that all advertisers welcome your inquiries.

Medical News

OF THE MONTH

Yellow Fever Vaccination

All naval and civilian personnel ordered to duty in areas where yellow fever may become endemic shall be immunized against yellow fever, it is stated in a form letter from the Chief of the Bureau of Medicine and Surgery of the United States Navy, and published in *War Medicine*. The letter explains that the yellow fever vaccine is prepared by the Laboratory of the International Health Division of the Rockefeller Foundation, New York, and says that "present studies indicate that immunization against yellow fever by this method is of lifelong duration, but in the presence of an epidemic another dose is given."

Glandular Treatment Ineffective for Hair Disease

Glandular treatment, at least in the present state of its development, is ineffectual for the fairly common disease of the hair known as alopecia areata, Morris Waisman and Edwin J. Kepler conclude in a report on their studies of the records of 138 patients, published in *The Journal of the American Medical Association*.

The disease is one in which baldness occurs in sharply defined patches, leaving the scalp or other portions of the body smooth and white. There may be only one small spot of baldness but frequently others appear and join to form large, queerly shaped areas. in some cases the condition progresses until all the hair upon the body has disappeared.

The two men say that changes in growth and distribution of hair occur frequently among patients who are afflicted with disease of the endocrine glands or organs and add that probably for this reason there has been an assumption that the cause of alopecia areata can often be found in the endocrine system.

"It is further supposed," they say, "that effective treatment results could be achieved if the offending gland were identified and appropriate endocrine treatment instituted. To test the validity of these assumptions this study was undertaken."

They studied the records of 138 patients who were examined at the Mayo Clinic because of generalized or universal alopecia areata. Their findings led them to conclude that at present the assumption of an endocrine causation for this condition is unwarranted by the facts. Only 4 patients in the group studied recovered completely.

A Warning on Sulfanilamide

A warning of the dangers of impaired judgment resulting from the taking of sulfanilamide and its derivatives has been made by *The Journal of the American Medical Association*. "When given to patients at rest in bed," *The Journal* says, "such drugs have been established as beneficial to the patient and of course harmless to other persons.

"Under some circumstances, however, drugs may have effects potentially dangerous to both patient and community. Not long ago a locomotive engineer who was taking sulfanilamide for an infection of the bladder was involved in an accident in which considerable property damage was done and a number of people were injured."

His impaired judgment which caused the accident was due to the reaction from the drug.

"Already physicians have ruled that airplane pilots must not fly until four days have elapsed after they have received any of the sulfonamide compounds. Patients engaged in mechanical work of any kind should not take sulfanilamide except when relieved from their responsibilities. Physicians thus have a definite obligation when prescribing sulfanilamide.

"Patients should be cautioned preferably to stay home and at rest while taking the drug and not to drive an automobile, make any important decision or sign any papers while the drug is being administered. Such recommendations seem especially advisable in view of the insidiously developing reactions of sulfanilamide when compared with such drugs as the bromides and the barbiturates."

Expanding Horizon of Medical Knowledge

The new electron microscope is providing the medical profession with knowledge heretofore unavailable due to the magnifying limitations of the ordinary microscope, a preliminary report in *The Journal of the American Medical Association* by Frances I. Seymour and Moses Benmosche indicates. They say that under the ordinary microscope nothing more has been revealed regarding the spermatozoa (male germ cells) than the contour of the head and the number and approximate length of tails. However, under the new electron microscope they found it to consist of a head, a body and a tail, with the head shaped like a pear on the vertex or crown of which is a crater-like notch.

They say that it is possible that the penetration of the spermatozoon into the ovum or female egg is effected by means of the specialized apparatus situated on the head of the spermatozoon.

Typhoid Carrier

Still another use for one of the sulfanilamide derivatives is suggested by J. Elliot Levi and Abner Willen, Baltimore, in *The Journal of the American Medical Association* in their report that the treatment of a typhoid carrier with sulfaguanidine resulted in six consecutive negative cultures for the typhoid organism. The results they obtained make them feel that this method of treatment is worthy of further trial.